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Feb. 1904

MY NATURE NOTEBOOK

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BY

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"TO-DAY WITH NATURE," ETC.



LONDON

ISBISTER & COMPANY, LIMITED

15 & 16, TAVISTOCK STREET, COVENT GARDEN

1903

PRINTED BY
WILLIAM CLOWES AND SONS, LIMITED,
LONDON AND BECCLES.

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P R E F A C E .



A YEAR contains only fifty-two weeks, but in every week all kinds of things happen in nature. This little book is a cursory record of one year, week by week, and its republication in this shape is due to encouraging requests by readers of the *Daily Graphic* and the kind permission of its proprietors.

The blank pages are supplied for readers to record their own notes of the passing seasons, with the intervening chapters as a guide for comparison with the year that is past.

E. KAY ROBINSON.

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midst of frost and snow; and the year's lambs were ushered, bleating, into a world of blizzards and icicles. So, with better luck—of which the first days of the new year gave generous promise—it seemed that 1902 might reach the Ides of March, as fateful in our springs as in Cæsar's fortunes, well ahead of the record of 1901.

EXHAUSTED SUPPLIES.

Those who decorate churches for Christmas in the country have the best means of judging what kind of a winter it has been so far, for the holly berries are the emergency rations of the birds. They will plunder the rowan tree of its flat bunches of scarlet-orange fruit in summery autumn, gobbling them so wastefully, too, that three berries are scattered on the ground for every one that is eaten. The berries of the elder are scarcely allowed to show purple before they are incontinently swallowed by the gabbling starlings and jarring missel-thrushes that scramble and tumble all day long among the elder's yielding twigs. But the holly is held in reserve, not by mutual consent, for there is no mutuality in bird-dom, where each thrives upon its neighbour's misfortunes, but because the berries have little attraction, in spite of the urgent invitation of their colour. So in a mild season the holly may carry its berries till the next summer; but in this winter the birds' hard times had reached the holly-eating stage just two days before Christmas.

THE HOLLY AND THE BIRDS.

The result was rather curious in different parishes. In some the emissaries and helpers of the parsons had taken the field betimes and collected stores of berried holly for the church two days beforehand. In others, where reliance was placed upon supplies contributed by parishioners, the birds were beforehand with the holly gatherers, and many a tree which had flamed with scarlet on the previous day had been stripped of the last glint of a berry between dawn and breakfast-time. And, after all, the holly fulfils its function better in feeding the birds than in decorating even sacred masonry ; for, like almost all thorny or prickly trees, it proclaims its dependence upon the birds by the very arrangement of its defences. So high as cattle can reach, its twisted spiky leaves present their bayonets at every angle against all comers ; but at a higher level, where most of the berries cluster and the birds are welcome, the leaves grow straight and spikeless. The hawthorn exhibits the same choice of guests in a great measure ; but you see this best, perhaps, in other lands, as in India, where the babool tree is thornless in the upper branches, on which the weaver-birds hang their swinging bottle-nests, but below, as high as camels can reach, it carries a formidable armature of two-inch thorns.

FEATHERED ALIENS.

Since the birds had eaten up their reserve of food before the New Year—for there was hardly a berry left even upon the hawthorns—one did not like to contemplate their fate, if really hard weather should come later. Luckily, there were very few redwings with us. Just when the autumn migration was in full progress, the wind unaccountably swung round to the north-west, and remained there for several bitterly cold days, during which the stream of bird migration to our eastern coasts was diverted to Central Europe. Let us hope that there were plenty of berries for the redwings there. There would have been none to spare for them here in any case; for the fieldfares, which arrived in great strength just before the change of wind, were more than numerous enough to eat all that the quarrelsome missel-thrushes would let them have, and the redwings, being the weakest, would have gone hungry. It is probably from this cause more than any weakness of constitution that the redwings die first in hard times.

SPRING'S FIRST FALSE START.

But the closing year, at any rate, brought no hardships for the birds. I do not recollect such an amazing change of climate in winter, even in England, as that which came to us with the morning of December 30, 1901. At 9 a.m. the windows became dimmed with moisture outside, not inside, the glass, showing that the temperature outside had risen

rapidly. And, sure enough, on opening doors and windows, a balmy air like that of a summer evening was wafted into the house, and to step out-of-doors was like passing into a warmed greenhouse. All day thereafter the starling was fizzling with suppressed music on the chimney-top, and the sparrows were vociferous in the shrubberies, while the primroses' green rosettes expanded, and the green bulb tips in every flower-bed lengthened to a noticeable extent.

THE FIRST WEEK'S SCORE.

January 9.—By the end of the first week in January the country had made such a marked advance towards spring as no subsequent severity of the weather could repel. The leafless trees outlined against the sky cast more solid shadows than they did a month before, because every bud on every twig had sensibly swollen during the mild weather. The myriads of seedling plants in hedgerow and thicket had each gained an inch or two of start in the great race of the year's life; and though frost and snow might drive back the paired partridges into the coveys, and silence the premature song-birds, no weather could undo the love-making which had been achieved, or take down the score which spring had made against winter in the first week of the year. Nor could it "ungrow" the fat caterpillars, transparent green, and buff or grey, with velvety black crescents and dashes down their sides, which came out in the evening by hosts to feed upon the springing herbage under the

hedgerows. Nor could it unlay the eggs of the wives of the winter moths that fluttered boldly abroad in the mild night air, and so came into the fatal radius of attraction of our lighted windows, where many of them danced upon the panes or sat with folded wings gazing at the light till midnight.

FINE HUSBANDS AND DOWDY WIVES.

Another power of attraction to which these winter moths succumb with joy is the mysterious influence with which their unwedded females permeate the surrounding atmosphere. While their suitors can go flaunting about on ample if flimsy wings, the females have at the most mere shoulder-knot apologies for wings, and must sit at home, little, inconspicuous, spidery virgins, waiting till sweethearts find them. They do not stay quite at home perhaps. In fact, they crawl out of the earth crevices where they have lived as pupæ to some exposed point of twig or tree-trunk ; but, wherever they may be, the males find them by scent, or, at any rate, by some sense other than sight, and the contrast between these winged males and wingless females is one of Nature's most characteristic bits of handiwork. Because the male is comparatively valueless to the species, he is decorated and winged and allowed to fly abroad, enjoying life and taking its risks ; but the valuable female is unadorned and wingless, for she must stay at home in safety and work out the destiny of the race.

THE WELCOME OF THE SHOT-GUN.

Besides its effect upon our home-staying wild life, it is the weather which regulates the winter visits of very rare birds to these islands, though it is not the abnormal temperature, but the unusual direction of the wind, which brings them. Unfortunately for them, and for all who would like to catch a glimpse of them, there is always some one waiting to do the honours of the British Isles to these distinguished visitors—with a shot-gun. Thus a single number of the "Zoologist" recorded the waxwing, the little owl, Montagu's harrier, peregrine falcon, and many rare sea birds—all "shot." And in November four waxwings were killed by one man at a single discharge!

A CHARMING VISITOR.

One was killed in my own neighbourhood, and I felt it as a personal loss; for the waxwing makes a beautiful addition to our bird life. He is so conspicuous and quaint, however, that even the sparrows draw attention to him by their chatter; and he has no chance of escaping the local gunner, as he runs about on the ground boldly gobbling up the privet or hawthorn berries. His short, unfamiliar note of alarm catches the ear, too; while his striking colouring, and graceful, dipping flight equally arrest the eye. No; until the law really *protects* rare birds, England is no place for the waxwing, or the hoopoe either: though the latter is, I think, quite the most delightful bird that man can have near his dwellings, not excepting even our own robin.

THE GREY SHRIKE.

Another striking winter visitant which very seldom escapes being shot is the great grey shrike, although the very much rarer lesser grey shrike which I saw on the Norfolk coast in the autumn of 1900 appeared to run the gauntlet of the English gunners successfully; * for I saw no announcement that this great prize had been "secured," as the phrase goes, by anybody. But a third and very little-known kind of grey shrike tempted fate in the same locality, and met it. This is known as Pallas's great grey shrike. All three are striking black-white-and-grey birds; but the lesser grey shrike has a black forehead, while the great grey shrike has a grey forehead and two white patches on each wing. Pallas's great grey shrike has a grey forehead and only one white patch on each wing. There are other differences, which become apparent when you compare dead "specimens," but as none of the three are shy birds, you can easily satisfy yourself as to their identity without killing them. The two great grey shrikes are winter visitants, but the lesser merely passes through the country during the spring and autumn migrations and so rarely that he is scarcely seen once in twenty years.

STRAYING WILD DUCK.

January 16.—As the end of January draws near, the miscellaneous shooter keeps finger on trigger while approaching small pools or streams of water, for the

* It, or another, was shot in the same neighbourhood in October, 1902.

wild ducks, if there have been any mild days in the new year, are beginning to prospect for breeding sites. Hitherto they have voluntarily formed concentration camps upon meres remote from ordinary gunshot, or lakes where, as at Holkham, in Norfolk, they are protected by landowners. Even in early December they will wander wide in search of food occasionally, for I have put one up in the middle of an oak wood, where it was foraging for acorns, and another from a frost-bound stubble a good two miles from water of any kind suitable for a duck. But as December passed into January, you could see through field-glasses that the gorgeous mallards on the lake became much more solicitous in attendance upon their sober-hued wives; and by the end of January they are constantly tempted, when the weather is favourable, to range in couples afield, to revisit the scenes of last summer's nesting joys.

THE WEDDED MALLARD.

Then, as the days slowly lengthen towards spring, and "warm spells" become more pronounced, the wild ducks succumb more and more to the instinct which bids them depart from their kind to rear their separate families in peace and solitude, where there are no rival drakes to pester the good-wife with unseemly attentions, and no unwedded ducks to tempt her lord and master from his allegiance; for ducks of neither sex are backward in their wooing. Thus it happens that at the extreme end, as at the very beginning, of the shooting season, the village gunner

gets his opportunity of wild duck for dinner. In earliest autumn, when the "flappers" can just fly, and their father is laying aside his dull nursery suit for his proper drake's garb of green and grey, auburn and silver, there is easy shooting and good eating to be had from woodside streams and osier bed. But months elapse before the opportunity returns, when the drakes, in the full splendour of their breeding plumage, escort their willing wives to the snug corners where, the weather tempting, they prematurely consider the question of raising another family.

GNATS IN JANUARY.

The lesser life of stream and pool obeys the same weather laws as the mallard. Where the stagnant water is filmed with silver grey, in the quiet back-water behind the rushes, you will find, during any spell of January's "abnormal mildness," that the wriggling, twisting progeny of autumn's gnats have in their turn reached the stage at which it becomes incumbent on them to hang with crooked backs to the filmy surface of the water, waiting till their skin splits down what would be their spine, if they had one, and releases the perfect gnat. Far from perfect is he, however, on first appearance. His silvery wings, that are to be, look little better than flimsy rags of cobweb, and all of his limbs are so soft and unsubstantial that if you breathe upon him he will collapse, a battered wreck, upon the sticky surface of the water. Apart from the rare risk of man's clumsy inquisitiveness, it is a perilous quarter of an hour that the new gnat spends in this world of

dangers. How secure would any of us be if we had to stand, when we changed our winter for our summer clothes, each on his own cast-off suit by way of raft?

TROUT AND MOSQUITO.

And the gnat suggests the trout; for there is a give-and-take connection between these two more close than many suspect. When the young trout first struggles from the egg he is a queer phantasmic little creature that you might dip up in a bucket by the thousand without noticing that there was much in it. And at this stage the female mosquito-gnat pounces upon the embryo fish as it touches the surface of the water, and kills it by sucking its apology for blood. Later the mature fish redresses the balance by swallowing the gnats' larvæ as well as the gnats themselves by scores. And there may be a direct cause-and-effect connection between the emergence of the gnats in mild weeks of the new year and the up-stream journeys of the trout, each female jealously escorted by at least one male, towards the spawning-beds.

WHERE THE SMALL FISH LIE.

In actual wintry weather, however, little life stirs in the fish-deserted streams. For one thing, this season is always chosen for "cleaning" the streams—which means cutting the banks uninterestingly even and scraping the bottom clear of its gracious greenery of water-weeds. The result is the creation of a slab-sided water-channel, to which imagination

almost refuses to restore the comely aspect which it will bear in spring and summer, its banks starred with clusters of marsh marigolds, or later fringed with creamy meadowsweet and tufted with crimson spikes of loosestrife, or tinged with the tall pink haze of willow herbs. But in the meandering ditches and transverse dykes that join the stream you will find life enough even in midwinter, though it is often life and death in queer conjunction. Here, for instance, where the stream, swollen with melted snow, sets up a tiny whirlpool at the junction of the dyke, is collected a large company of very small fish. Each is as motionless in the revolving water as a little bit of stick. Yet it must require a delicate adjustment of motive-power to remain thus immovably balanced in a current which is all the while forcing the head one way and the tail the other.

MAKING WAY FOR THE CORPSE.

As a rule, there is nothing to show that these little fish which hang in motionless groups upon the fringe of a racing current are doing anything particular; but the other day I happened upon them in queer company. A wretched frog had somehow been drowned out of its winter quarters, and its corpse, with all the limbs extended as in life, was solemnly pirouetting round and round in the eddy where the little fish hung motionless. If you picture the carcass of an elephant twirled around by some invisible force among a crowd of men, you get some idea of the relative proportions of the frog and the fish; yet none of the latter seemed disturbed in the least as the

monster waltzed through their serried ranks. They simply made way for it each time without any visible effort of avoidance. If the frog had been alive he might have swallowed half of the little fish as an instalment of breakfast, except that not one of them would have stayed to be caught. How did they know that his corpse could not swallow them?

PREMATURE "SPRING."

January 23.—During mild weather in the middle of January wild life in animal and plant comes on apace. Violets and primroses star the woodland, and thick-sprinkled daisies make a milky way on sunny slopes; yet they afford, I fear, very scanty supplies for the honey-bees which swarm abroad prematurely in the sunny afternoons. The robin, hedge-sparrow, and chaffinch sing gladly, and, as the sun sinks westwards, missel-thrush, song-thrush, and blackbird join in chorus almost as in April. In sheltered grounds, too, you can hear the murmurous monotone of the nesting ring-dove. Blackbird, thrush, and robin, too, are evidently more than thinking about nests, as you can tell from the sly and silent way in which they slip out of certain places in the shrubberies or hedges as you pass. Most of the robins, also, disappear from round the house, only those few pairs remaining which intend to nest on the premises.

THE FISHES' CUNNING.

All of this is premature, of course, and some may suffer for it; but it is part of the inevitable advance of spring, seizing every opportunity to gain ground.

And the advance is all along the line. In spite of its ugly "cleaned" banks, and the cutting of most of its water-weeds, even the trout-stream begins to recover some of its lost attractions. The fish are on the move, travelling always upwards apparently; for if you stand back in the shadow of a tree and watch some spot where the drastic "winter-cleaning" has left a belt of shallow, with no cover at all, you shall see dark forms, generally in couples, quickly dart across it from the dark pool below to the dark pool above. In a heron-haunted stream the fish know all about the risk of day-lit shallows; though in water which is fished neither by man, beast, or bird, you may see them lying by preference in its shallows, apparently enjoying the sunlight. I doubt, however, whether this is the governing motive. When fish have learned that they have nothing to fear from enemies outside the water, they naturally seek shallow retreats where monsters of their own kind cannot get at them; for fish live in an upside-down world compared with ours, since it is the little ones that can venture farthest towards the banks, where it is "out of depth" for big ones to follow.

THE FEARSOME OTTER.

With the fish there have returned one or two welcome kingfishers—arrowy specks of turquoise, that almost seem to leave a streak of light along the bee-line of their flight from one fishing-perch to another. By another coincidence, it is usually about this time of the year, and in similar weather, that an otter pays our stream a visit. It is not always the

same animal ; for the gamekeeper dislikes otters, and the visitor often remains for good, in a glass case in some one's parlour. There is a sort of fearsome mystery about an otter which makes people more fond of putting him than any other beast, stuffed, into a glass case. I can recollect that in my own childhood the otter was a thing of awe, and its footprint on the mud a symbol to be gazed upon with open mouth, and many half-anxious glances at the quaking reeds.

A MYSTERIOUS BEAST.

Where the otters which thus come in annual single file to our water are reared no one seems to know, for the animal is not known to breed in any part of the stream, above or below, and there is no neighbouring river to send its overflow of animal population to seek new "spheres of influence." But of the otter it is more difficult to speak with certainty than of almost any other British beast. His habits are nocturnal and very evasive, and it is no uncommon thing for the goodwives of a village to be harassed for months by depredations among their chickens and ducklings, which they put down to cats, dogs, foxes, tramps, stoats, or anything, except an otter. Because who would suspect that so large a beast of prey could live without once being seen by anybody in the six-foot streamlet at the bottom of the garden, where they wash the clothes and dishes? That the otter is often a wandering animal in winter, "here to-day and gone to-morrow," as the gamekeeper says, may be taken for certain ; but that he performs regular migrations, like so many of the feathered and

finny creatures that he preys upon, seems a large assumption.

TENANTS OF THE DYKE.

To the shallow dyke where our last otter died, where moorhens paddle and dabchicks are sometimes surprised, greenfinches come in the winter for the food which they alone of birds seem able to extract from the withered bur-reeds, and goldfinches flutter like butterflies along the banks where last year's dead and broken thistles still hold some seeds for sharp eyes and needle beaks. The snipe is always there in hard weather, too, lurking under the bank; for the ice always falls away a little from high-water mark, leaving just an inch or so of exposed mud, where the snipe's long, nerve-tipped bill can feel about for worms. Here comes the wren, too, itself almost a little bunched-up snipe; and the starlings scramble up and down the bank, poking their bills wherever they can enter. The blackbird and the robin hunt along the banks, too, quite as earnestly, if with less fuss, than the starlings; for wherever land and water join there is always a margin where lie the corpses of things that belonged to one element and died in the other; and wherever there are corpses there is food.

A CONTRAST IN CONDUCT.

But the community of interest which brings robin and blackbird together wherever Nature spreads her life and death is not more marked than the diversity of their conduct where man is concerned. I came down to the dyke the other morning, and as I

appeared at the end of the hedge a blackbird rose with a chatter of alarm from the bank where he was feeding, and flew straight down the dyke close to the water, as blackbirds often do, not daring to settle again till he was eighty yards away. His outcry and flight disturbed a robin which was about fifty yards down the dyke; but instead of following the scared blackbird's example, the friendly little fellow came flying all the way up the dyke, and settled within a few yards of me, where he bobbed his head and flicked his tail, and waited to see whether my subsequent proceedings were likely to benefit him. There can be no doubt, I think, that this instinctive attraction of the robin towards our company, wherever we may meet, is based upon some very ancient and intimate connection between us. I believe that before man learned to barricade his dwelling with glazed windows and locked doors, the robin lived inside, and not outside, human houses.

WEATHER AND LAMBS.

January 30.—In its abrupt alternations between “abnormal mildness” and “semi-arctic conditions,” the passing winter's temperature had been almost an exact replica of our experiences in the previous year. So we might reasonably anticipate blizzards in the lambing-time, rapidly approaching. The wail of the new-born lamb, catching the ear through the whistle of the snow-driving blasts on a Norfolk upland, sounds pitiful enough; but, as a matter of fact, and except as it concerns his personal convenience, the shepherd rather welcomes the bitter wind. What

he dreads, both for lambs and ewes, is wet; and for this reason you will see that, even on the bleak east coast, the lambing yards are placed high up the slopes of the rolling landscape. The wind may whistle as it likes, but the thick furze hurdles keep it out of the comfortable straw-padded pens, where, in response to anxious inquiries, the smiling shepherd will tell you that all the mothers and their children are doing as well as can be expected.

A BAD TIME FOR THE RABBITS.

And, as most rustic operations are made to fit into each other, you will generally find that the farmer achieves the comfort of his lambs and the discomfiture of the devastating rabbits by the same stroke. For the furze-brake is the rabbit's stronghold, where he defies all human or canine pursuit; but when furze is needed to shelter the lambing-yard, the wily farmer has it cut in cross channels through and through the brakes, thus opening short cuts to the interior of every part of the rabbits' defences. Altogether the interregnum between the game-shooting season, which legally ends with January, but has practically ceased upon most estates for weeks beforehand, and the nesting season, is always a bad one for the rabbits. These and wood-pigeons are the keeper's perquisites, and he makes the most of the short interval when his gun, dogs, and ferrets may be busy in the warrens and coppices without interfering with his master's sport or the pheasants' breeding. So the bunny has his special shooting season, which, though short, is sharp.

THE HOODIE'S PERQUISITE.

If you are accustomed to read the signs of the country, hoodie crows will often tell you where the keeper is at work among the rabbits, though you may not see him, and his gun is silent for the moment; for at such times these wise birds, usually wary enough to keep a field between themselves and a human being, are loitering about the pathway that leads into a covert in an expectant manner, and will only fly a little to one side as you pass, uttering a croak of protest. They know that when the keeper has been busy all the morning—as they could tell from the frequent reports of the gun that seldom misses, followed often by shouted orders to the dog ranging the covert for the shot rabbit—there will be rare pickings ere the dusk falls; for the keeper “cleans” the rabbits before he carries them home—it considerably lightens his load—and what he leaves is the hoodies’ perquisite. Often they will remain discussing the ugly meal until you would have thought it much too dark for day-birds to be still abroad.

BEETLES FOR SUPPER.

The hoodie crow is almost crepuscular in its habits for other reasons also at this season, for the farmers are manuring their plough-land, and after any mild day the dor-beetles from the disturbed manure-heaps wheel in blundering, droning flight at early dusk. Then you may see the hoodie crows on the dim uplands making sudden little parabolic excursions over the ground, and quickly settling—

settling the fate of a dor-beetle, too, each time. Sometimes you may find their pellets composed almost entirely of the indigestible shining armour of dor-beetles.

CROWS AND COCKLES.

Another favourite article of diet with the hoodie crow has armour, however, which even his strong gizzard cannot always crush. When the hoodie daily follows the retreating tide on the east coast, like our human "cocklers," he has to break open the shells of the cockles that he cunningly digs out of the sand before he can swallow their contents. But some cockles have shells which defy even his iron beak, and then he resorts to the device of the eagle with the tortoise, flying up into the air with the cockle and letting it fall upon some stony place. On one part of the Norfolk coast a half-mile of metalled but abandoned roadway to the beach is thickly strewn with cockle-shells that the hoodies have dropped upon it; and cockle-shells may also be found lying about the woods where the crows roost at night, perhaps two miles, "as the crow flies," from the sea. It would seem that the hoodies, when obliged to leave their cockle-hunting in the gathering dusk, carry their last capture to their roost, and enjoy a little supper, as it were, in bed.

FEBRUARY.

CROWS AT LAMBING-TIME.

February 6.—It may be only a gruesome coincidence—though Nature's clockwork arrangements of cause and effect leave little room for coincidence—that just when the shepherds on our east coast are putting the finishing touches to their snug lambing-yards of hurdled straw and furze, the hoodie crows always assemble hard by in battalions. Where hoodie crows are numerous carrion crows always seem scarce, although they are so closely related that in many places they interbreed freely; but it is rarely that in a flock of fifty hoodies one sees a single carrion crow, though both would be attracted by the same causes, having the same horrid tastes. Not that the crows often do much mischief at lambing-time—our lambs and ewes are too carefully watched for that—but one does not like to think of the fate of a dying ewe or weakling lamb that might be overlooked and left to the cruel vivisection of those iron beaks.

MAN AND BIRDS OF PREY.

It is a human instinct to shudder at sight or thought of carrion birds, but to like and admire birds of prey. The reason is, of course, that the past experience of our species tells us of the fate

of unburied dead or dying human beings found by the carrion birds, while it knows little or nothing of injury suffered from birds of prey. If eagles made it a common practice of carrying off human babies, as stories are told of them now and then, we should regard these "royal birds" with hatred and loathing, rather than admiration. Indeed, from a scientific point of view, the fact that man admires and likes the eagle is the best proof that these stories of baby-snatching are seldom if ever true. No species in nature—and man is not yet supernatural—can like and admire its natural enemy. As for the smaller birds of prey, the hawks and falcons, our admiration of their fire and dash has been enhanced by ancient comradeship in the sport of falconry.

THE MERLIN'S LIMITATIONS.

On the east coast, in winter, where migrant merlins haunt, you may sometimes see wild flights as exciting and prolonged as any that this little falcon gives you when tamed and trained to fly at skylarks in early autumn. But though the wild merlin on passage is naturally a bolder, stronger flier than the bird reared from the nest in captivity, it rarely attempts, because the attempt would scarcely ever succeed, to catch a scared skylark that has started aloft. Beautiful to witness are these "ringing" flights when the trained merlin is fairly pitted against the new-fledged skylark; but the lark's full wing-power in winter makes a stern chase skyward almost hopeless. Even a wagtail or a meadow-pipit—birds which often attract the merlin's pursuit by flinging

themselves across the sky when other small birds dive for shelter into the hedges—will generally escape in the end, if the flight is prolonged.

THE CHANCES OF THE FALCON.

For it is always the first stoop of the little falcon which is most deadly; and after two or three misses it seems to continue the chase in a spirit of vexation only, making quick, successive dashes at its quarry from angles where failure is certain. For of two birds flying at much the same level it would be strange if the pursued, by dodging, could not neutralize the pursuer's superiority in speed. See how many times a hare will elude a greyhound, although it is obliged to remain on the same plane as its enemy. If the hare could, like a bird in the air, dodge up aloft or down below, as well as to right or left, the greyhound would never catch it. The hawk's great chance lies, therefore, either in flinging itself upon its prey by the momentum of its first sudden entry upon the scene, or else in discovering a victim flying at a much lower level than itself, when the accelerated speed of its long gliding descent may make even the most frantic attempt to dodge its lightning stroke a failure.

CHASE OF A PEEWIT.

When the merlin, favoured by the landscape, comes suddenly over the brow of an upland on whose lower slopes peewits are feeding, you may see most marvellous feats of aerial agility; for the merlin

"coasts" down the incline at a speed which only the extraordinary twisting power of the peewit in flight could baffle; and, though she misses the stroke, the little falcon has still the advantage of her momentum, which shoots her aloft for another stoop. But the peewit has not been idle. He has wasted no precious fraction of a wing-beat since the death-bird rushed past him, but has smitten his way skyward too; and when the merlin turns over for her second dive there is much less difference in their altitudes. At the same instant the peewit dives too, and just as the merlin's quicker descent is on the point of overtaking him—actually has overtaken him, to human eyesight—the falling specks diverge, and instantly begin to rise again, the peewit gaining a few yards at the turn, but the merlin with still some of her original momentum to the good.

THE THRUSH'S FATE.

Thus you see that after each miss the falcon's chance grows less, and when—in irritation, it seems—she begins to chase the peewit, instead of rising aloft to stoop at it, she throws her last chance away; for the game of dodging and doubling in the air is the peewit's speciality. He plays it by himself, out of sheer exhilaration, in spring, swooping and swerving and almost turning somersaults all over a field, as a sort of fancy exhibition for the rest of birddom to admire. Perhaps he might almost enjoy playing it with the merlin after a while, but the latter soon discovers the futility of going after a bird which can turn three times to her once. So she goes off, and

perhaps in the very next field she sees a foolish thrush attempting to cross the open space below her. With half-closed wings she glides—slowly, it seems, at first—down towards the hurrying victim. Swifter and swifter grows the descent, and almost before you realize that she is gaining, the two specks touch, and feathers floating in the air mark the spot where it happened. It looks so easy and simple.

THE WEATHER AND THE BIRDS.

February 13.—The weather of 1902 continued in February to follow the previous year's unpleasant precedents with almost offensive fidelity ; for it was towards the end of the second week in February that the winter of 1900-01 shut down upon us with its coldest "snap." Indeed, it has become rather the rule of our British climate that as Valentine's Day approaches the birds should have to think of saving their lives from starvation instead of pairing and frivolity. Fortunately, many of us understand and try to practise our duty to our feathered neighbours in hard weather, and—in the country, at any rate—the garden is rare where a "bird table" is not spread for the starving crowds of mites that cannot dig in the hard ground and are afraid to beg.

WELCOME AND UNWELCOME GUESTS.

The gluttony of the omnivorous house-sparrows, however, sometimes chokes charity at its source. Sparrows are never really in danger of starvation, like the soft-billed birds which depend upon Nature's

commissariat. They are familiar with the taste of every edible which man manufactures or cultivates; and in hard weather they only crowd round a little closer and pilfer more audaciously. So there is excuse for man if he fails to see why he should put out food for a "lot of sparrows." Fortunately, the sparrows' experiences, through ages of thieving and human attempts at retaliation, have endowed them with an instinctive dread of everything which bears the semblance of a trap. String they especially abhor. So, by suspending the food, or a board on which it is placed, by strings, or even by merely stretching strings a few inches above the ground round a "bird-table" on the lawn, you may have the pleasure of seeing, in almost every garden, however small, blackbirds, thrushes, starlings, robins, hedge-sparrows (a slender-billed bird, totally unlike the house-sparrow in everything except size, name, and colour), robins, and tits assembling daily for a breakfast which the sparrows dare not devour. Even the chaffinches and greenfinches dread the string far less than the house-sparrows, which hop around watching the bolder birds risking their lives—so the sparrows think—under the deadly string. They get some scraps of the food which the others pull out of the zone of supposed danger, and one or two daring spirits will, after a time, learn to take it for themselves; but no one would grudge them this. What one objects to is that, so soon as unprotected food has been put out and a robin has been seen to eat without an explosion or the snap of a hidden trap occurring, the sparrows should assemble in a jostling mob and gobble everything up.

THE TITS IN LUCK.

A lump of suet or a meat bone, a rind of cheese or a cocoanut suspended from a string, will be visited all day long by tits, and occasionally by robins, and the acrobatic feats of the feathered mites will repay you for the kindness. If you hang up a whole cocoanut near a window, with a hole scarcely larger than a penny cut in the side, you will see the tits at first hanging upon the outside to feed while it spins. Later, when they have eaten all that can be reached from the outside, they fearlessly pop in and out; and the sensations of a tomtit when he first enters the cocoanut must resemble those of Aladdin in the cave—a roomy, vaulted chamber, glowing with soft light reflected from its walls of sweet, solid food.

A MIXED CHARACTER.

Tits, however, like most birds, are scraps of solid selfishness wrapped up in feathers. We cannot blame them for this. It is Nature's invariable rule that the weakest must go to the wall, and tomtits would not be the active, plucky little imps that they are if their ancestors had not won their meals from each other by pluck and activity. There are times, however, when the tomtit shows more pleasing traits. In the nesting season it is sweet to see the fussy courtesy of the male while he hunts for spiders as love-gifts for his fluffy little bride, who sits idly aloft in the spring sunshine, preening her feathers and

accepting the spiders as the commonplaces of courtship. It is pleasant, too, later in the year, to watch both parents busily hopping, scrambling, and pecking over every bush in the shrubbery to fill the little stomachs of eight or nine wee balls of blue fluff at home. And when all the little fluff balls have tumbled out of the nest and are introduced to the wide, wide world by their excited parents, what a fuss goes on! The shrubbery seems all blue tits.

ACROBATS AT DINNER.

Under the iron rule of winter, however, self-preservation is the tomtit's motto, and when he has found a cocoanut hanging on a string I have not noticed that he ever willingly permits any other tomtit to partake of it. He cannot be on the watch all day, however, and whenever his back is turned other tomtits are not idle. Instead, too, of hanging up the entire nut, you can bisect it, and make an elegant trapeze out of each half by suspending it with fairly taut strings or wires between two uprights. Although a tit, perhaps, comes nearest to Sir Boyle Roche's "bird," it cannot *quite* be in two places at once; so, while the master tit of the place is giving his unrivalled trapeze performances and tight-rope dancing feats at one half cocoanut, another tit will be doing the same at the other, both hammering away at the food with their quick chisel beaks as though they had to catch a train the next minute.

DOINGS OF THE NIGHT.

Other acrobatic performances, which we are not privileged to witness, take place upon the swinging wire and twirling cocoanut. In the still watches of the night little mice take the places of the tomtits, and their antics, could we see them, would no doubt be equally engaging. Somebody sees them sometimes, however; for in the dusk of a winter evening you may catch a glimpse of a ghostlike presence drifting like a large, swift snowflake down the dark line of the shrubbery, with a quick swerve and swoop towards bird-table or swinging cocoanut. The barn owl has no taste for the provender which you supply to your feathered pensioners of the daytime, but he likes mice as much as they like birds' food. Many a mouse, I fear, twirls from that cocoanut into eternity. If you examine the nut by daytime you will find it daintily grooved with tiny teeth marks; though that mice, on scenting cocoanut in the air, should infallibly discover that they can reach it by climbing above and crawling down the string, always seems a marvel of cleverness.

BIRDS STARVED TO DEATH.

February 20.—We had reason to be grateful in the middle of February that the contrary winds of the previous autumn kept back most of the migrant red-wings from our shores. These handsome thrushes, with their ruddy flanks and yellow eyebrow-line, are the feeblest of the foreign birds which visit us in winter; and most of the few that were with us could be picked up starving, with breast-bones like

knife-blades, on the third day of the frost. The field-fares began to suffer, too, then, and a walk through the snow-covered fields was made melancholy by the sight of these poor birds, too weak to fly, and hopping clumsily, like lame frogs, out of the way of your footsteps. Now and then you would find one unable to move at all, with wings and tail half spread upon the snow, and its eyes already growing dim. If you picked it up you could hardly believe that its bones and feathers could be so light. It seems, somehow, doubly sad that so fine a bird—for the fieldfare, viewed in the hand, with its auburn mantle and delicate, contrasted shades of slate and grey, black and buff, is much more beautiful than one thinks from merely seeing them scattered about the fields, looking like dark thrushes—should come to us across the seas for sanctuary in winter, only to be killed by the frost of a treacherous February.

THE MOST USEFUL PLANTS.

For the frost came at a dangerous time for the birds, after all the berries which ripened in autumn had been eaten, and before the ivy berries were really fit to eat. In the southern counties, perhaps, the ivy may have been forward enough to maintain the birds during the short spell of severe weather; but in the east and north only a few of the topmost clusters of berries in sunny positions could be eaten. It is only at special times that one realizes the value of three of our commonest plants—the hawthorn, and the bramble and the ivy—in sustaining the enormous bird-population of the British Isles in winter. Others

are useful, too, such as the wild rose, the holly, and the yew; and the rowan tree and elder spread for a short time in autumn a generous banquet, which the birds waste riotously. But the clustered blackberries of the bramble form almost the sole food of hosts of soft-billed birds in later autumn, while the haws of the hawthorn keep life in their bodies during the wintriest months.

THE SANCTUARY OF IVY.

But the ivy is the most generally useful of all British plants to wild life. Not only does it provide food at a critical time in early spring, but it gives the best of shelter all the year round, and in late autumn is almost the sole resource of bees and butterflies and moths. There is probably not a single ivied tree in the whole of the British Isles from which, if you threw a stone into it at dusk, more than one bird would not be startled; and into one thick ivy clump on a hedgerow tree you may sometimes watch greenfinches and yellow-hammers, starlings, blackbirds, tree-sparrows, and bullfinches, all going to roost together. And if you wait a little, perhaps, a barn owl, who always plays Cox to the Box of birddom in general, may drift out of the same ivy-clump, like a large white feather-fan, floating into the gathering night.

NESTING-TIME DRAWS NEAR.

It is the very proper custom now to taboo birds'-nesting as a pastime for boys—though some of their "scientific" seniors are not above offering long prices

for whole clutches of rare birds' eggs, "any number!"—but few of us cannot remember the pleasurable anticipation with which we approached each ivy tree as offering an almost sure find of some sort of nest. Some of us retain that sort of pleasure still, though none of the nests may be left poorer in speckled treasures for our visits; and it is a glad thing to know that, in spite of frost and snow, in spite of starved foreign birds in every field, nesting-time is very near. Under the snow in the shrubbery-nooks the violet-blooms have kept their beauty safe; and though the primroses are later than last year—when we gathered them for the village wreath for Queen Victoria's funeral—they are coming on bravely through the snow; and the blackthorns in the hedges have their twigs encrusted already like coral, with close clusters of tiny flower-buds in myriads.

SPRING FEVER.

The hares are already capering in the fields in the ecstasies of their annual spring fever; and even the birds, in spite of frost and snow, tell us the same story. The partridges are nearly all in pairs, although the exigencies of snow-time drive many temporarily into coveys. The cock-pheasant crows his midday challenge against all intruders within his harem precincts. To see wild ducks you need not go to lake or mere, where they have been gathered in winter flocks. Now you may put them up, always in pairs—and the gentlemanly drake, always giving precedence to the lady in flight—from any cosy corner

where the trout-stream winds past osier-bed or covert. Even the skeins of wild pink-footed geese exhibit a tendency to disentangle themselves; for often now, besides the great clanging squadrons in V-shaped formation, you may see a solitary pair of geese winging their way across the sky; and the voice of Spring is calling to large and small alike, for the little tomtit in the hedge could not make more fuss about his new wife if she were the Queen of Sheba.

SPRING MARCHES.

February 27.—Frost and snow may return and return again; but spring marches. Pass into the sheltered shrubbery out of the east wind that brings the keen “nip” of the frozen Baltic, and look around you. It is spring everywhere. That hedge-sparrow, nervously flicking his wings as he leads his wife from bush to bush, has evidently chosen already a nesting-site very near the spot where you stand. The dark green lacework of the cypress at your side is embroidered with myriad points of gold, the swelling flower-buds of the spring. On the lilac you can already tell by their bulging points which twigs will bear bunches of flowers and which leaves only. See those untidy hay-like wisps still clinging to the larch branches, whose leaf-buds are almost bursting. Last summer there was a wild bindweed straggling over half of that larch, starring it with large white convolvulus flowers. Those hay-like strands are all that is left of its unchecked luxuriance; but follow them to the ground, and you will find half a dozen new, vigorous

points well above the ground. These will push upward with every hour of sunshine, for they have far to go.

THE FROST'S VICTIMS.

But to enumerate the plants that are thrusting themselves forward in the shrubbery, and describe their methods of warfare with each other, would be an endless tale, because the plant politics of any square foot of wild ground would fill a volume of the struggle for existence. We have seen one hard side of that struggle among the birds this winter, and the last spell of frost proved more fatal than appeared at first. Besides the redwings and fieldfares, which could be picked up dying in the fields, sad traces along the hedgerows—where the hoodie crows have picked what flesh there was from the bones of the corpses—show that blackbirds also perished by scores. We see less of the starving blackbird than of the foreign thrushes in like case, because his haunt lies inside, and theirs outside, the hedges. But all that dies on our coast lands in winter comes to the hoodie at last; and by counting the patches of feathers in one thirty-acre field and multiplying this according to the acreage of a county, you get some idea of the appalling destruction of bird life that one spell of frost can cause.

A MALE BEAUTY COMPETITION.

So soon as the frost departs we see a brighter phase of the birds' struggle for existence. Wives and nesting-sites have become their most urgent

necessaries of life ; and every sunlit field is musical with the strife of skylarks. Whichever sex it may be that predominates among skylarks, the quarrels that catch the eye seem always to be those of rival males for the affections of a female. You see at once, too, that such beauty competition as there may be among these plain-coloured birds is all on the side of the males. The female stands demurely apart, looking as dull, not to say dowdy, as ever ; but the males are transformed. With crests erect, pale body-feathers fluffed out so as to send the general aspect of the plumage up two shades in colour, with wings half open and tails up-tilted and spread enough to show the half-white outermost feathers and the white margins of the next ones contrasting with the almost blackness of the other webs, you would hardly take them for common skylarks as they vehemently peck the ground in challenge to each other.

“NONE BUT THE BRAVE.”

But “showing off” is only a small part of the skylark’s courtship. No doubt it has its influence upon the wooed one ; perhaps, too, she has not been unmindful of the trills and cadences of her two suitors when they sang aloft. But the real issue is decided by single combat ; and in a moment the two larks, singing so fast as to be almost squealing, have met in the air, and are whirling round and round each other. Whether blows are actually exchanged, or whether beak merely fences with beak, it is impossible to say, so quick are their movements ; but after half grappling several times in the air, they

break away, one skimming some twenty yards off, while the other, evidently the victor, alights close to the female. The defeated one makes a show of challenging again, and the conqueror perfunctorily responds ; but the matter is really settled.

“ HUMAN AFTER ALL.”

Watching the birds thus far, one understands their actions and motives so well by human analogy that one credits them with human sentiments ; and then, as almost always happens, their behaviour suddenly becomes so inconsequential as to make one wonder whether one has not misunderstood all that had gone before. For here is the victorious skylark, close to the ladylove for whom he entered into single combat, and she, by bowing towards him, seems not displeased at the issue of the fight. And what does he do ? He quietly walks off to feed by himself. But you will notice that as he goes along feeding, she, also appearing to feed, follows in the same direction ; and when, without any warning, he suddenly rises and flies, skimming over the grass, to quite a long distance, she rises almost at the same instant, and alights as he alights, close to him. After all, his seemingly neglectful behaviour was not so unhuman. They are now man and wife.

MARCH.

ON THE SUNLIT SHORE.

March 6.—You may enjoy a day of days on the seashore of the east coast when the sun shines warmly in March. Sheltered by the natural amphitheatre of the sandhills, the wide yellow ribbon of the beach gleams like summer gold between the shimmering blue sea and the silver-grey grass that clothes the shifting slopes. And the embroidery of the ribbon is tangled jetsam of myriad things of the sea, wonderful every one. It is rarely, however, that you can pace the sea-beach on our storm-swept east coast in winter or spring without coming, at every few yards' distance, upon the battered and beak-torn remains of some luckless sea-bird, puffin or guillemot, little auk or razorbill, that the sea winds have driven to their death ashore, and the seagulls and hoodie crows have dissected. In March especially, when spells of sunshine are sandwiched, as a rule, between hurricanes and blizzards, occasions when the shelving beach is not littered with corpses are rare indeed.

DIFFERENT POINTS OF VIEW.

As one watches the pretty line of seagulls, flickering white in the sunshine, like the crest of breakers, as they shift out from sandbank to sandbank with

the receding tide, it is hard to believe that they are scavengers, after all, and the hoodie crows, solemnly pacing the sand with reverend mien, seem more fitted to offer prayers for the deceased sea-birds than to batten upon their vitals. But the beauty of Nature lies in its co-ordination, and not in its sentiment. Indeed, if we had not an instinctive repulsion to carrion birds, based upon ages of experience of the treatment which they accord to human corpses, perhaps before life is actually extinct, we might see as much beauty in the conduct of hoodie crows or great black-backed gulls, when they quarrel over the remains of a guillemot, as we do now in the thronging of bees and butterflies to sweet-scented flowers.

DRIVEN TO EAT TURNIPS.

This March, so far as it had gone, had been an exception, however, for we had had no preliminary tempests from the north and east to strew the beach with dead things. The hoodie crows had, in consequence, gone comparatively hungry, for it was more than a fortnight since they picked the bones of the last of the starved blackbirds and fieldfares whose bodies littered the field-sides and hedgerows after the hard frost; and they had to fill themselves cheaply with turnips. When the cart made the circuit of the field, discharging a shower of turnips in every three yards, the ewes themselves, baa-ing in a hundred strange hoarse tones to the treble bleating of their lambs, were not more eager than the hoodie crows to sample the generously scattered meal. Before the

gate was opened, like a sluice that admits a woolly deluge to the field, the hoodie crows, which had been exchanging notes about the turnips from a score of surrounding trees, had alighted, and with sidelong hopping runs reached the nearest roots, and commenced drilling business-like holes through the hard rinds to the juicy centres.

LAMB-MURDER.

If the hoodie crows confined themselves to larceny of turnips, the farmer would tolerate their presence in his coast-wise pastures. But he has reason to mistrust the watchful interest which they take in the proceedings of his poultry—for eggs mean money—and it needs not the discovery of *many* little lambs lying stiff and stark on the soft green grass, with empty eye-sockets, to convince the farmer that an extra boy with an old muzzle-loader must be added to the shepherd's staff. But the crows quickly take the measure of the muzzle-loader, and from their vantage trees in the neighbouring fields you hear them telling each other what the boy is doing, and where he is going. So they still get as much turnip as they can eat, though while the boy promenades the hedgerows with his gun, looking for early birds'-nests with persistence worthy of the hoodies themselves, the lambs have peace. Now and then, indeed, you may see a hoodie crow deliberately leave a turnip through which it has been driving a shaft and walk circuitously up to a sleeping lamb, and give it a vicious tweak, to see how much alive it is; but as a

rule the installation of the boy with the gun in the pastures puts an end to the loss of lambs.

INEFFECTIVE SCARECROWS.

But crows, with rooks and jackdaws, belong to a class of birds which have enough independence of thought to make the success of measures adopted against them always a variable quantity. Sometimes a couple of dead hoodie crows hung upon sticks—it generally falls to the lot of the hoodies, who are much less wary than the rooks, to supply the east-coast farmers with scarecrows—will keep all the marauding tribe of rooks, jackdaws, and crows away from a forty-acre field of seed. At other times, or in other places, you may plant scarecrows of elaborate manufacture all over a small field, and yet the sable marauders will assemble thither for breakfast every morning with cheerful punctuality. Of all the corn-stacks round here there is only one which no measures suffice to protect. At each end of it are hung up dead crow-birds; and on the sloping sides the farmer, who is a rare stalker of rooks, has flung up the bodies of half a dozen more. Yet at any hour of the day, almost, you may see a dozen rooks and jackdaws tugging straws, with ears attached, out of the sides of the stack, or stripping off its straw thatch. The explanation lies, apparently, in the fact that a clump of trees grows close to the stack, and from their branches the marauders are able to reconnoitre the position carefully. They familiarize themselves with the aspect of the scarecrows and the dead rooks, until at last one bold spirit ventures down, and the

rest soon follow. Similarly, the fields where the lambs are attacked are plentifully surrounded and sprinkled with trees, whereas the forty-acre field, efficiently policed by two scarecrows, has not a tree near it. There the crow-birds have, as it were, no halfway house where they can sit and calculate chances before venturing upon the forbidden ground.

SPRING IN BLACK AND WHITE.

March 13.—Two of the pleasantest country signs of spring are the return of the rooks to the rookery and of the lambs to the field—tokens in black and white that winter is ended. Though, when the rooks have returned, there can be no mistaking the fact, how few of us have actually witnessed their home-coming. During the winter they pay occasional visits to the old trees, and as spring approaches these inspections occur more frequently, until in early March you may see them busy about the nests every morning. Then the ground under the trees becomes littered with the old sticks that they have pulled out of last year's nests, and you know that they will soon resume residence. But they leave the rookery before noon daily, and you grow quite accustomed to see the trees full of birds every morning, but standing silent and empty against the sky in the evening. For some days before they actually return they very nearly do so, for as the dusk is falling you may see small parties of them winging their silent way over the fields towards the rookery instead of to their winter roosting-place; and others, seeing them, will follow.

A HESITATING RETURN.

But when they have arrived above the trees they merely circle in the air, caw once or twice, and then return the way they came ; and the others that were following will turn round with them and repair to the winter roost once more. It is evidently in all their minds to return, but for some reason they defer it from evening to evening. The explanation may be that each community has recognized leaders, mighty old warriors to whom priority is conceded in all things, and that until these have transferred their flag, so to speak, from the winter roost to the rookery, it would be almost mutiny for the younger ones to make the change. Or it may be that the matter is decided by those which chance to go to roost earliest each day, and that the birds which pay a flying visit to the rookery at dusk, but merely caw once or twice and then return, really come to find out whether the others are there or not. Or, again, it may be that these domiciliary visits are paid at dusk simply to ascertain if all is as it should be in the old home which they propose to reoccupy immediately.

THE LAMBS' FROLICS.

The return of the lambs to the fields is attended by no such mystery. The farmer knows perfectly well the exact day upon which his first lambs will be born ; and the fact that their appearance coincides with early spring is merely the result of his desire to put his mutton on the market at the earliest date, subordinated, however, to the necessity of having

plenty of food for the growing stock. So the springing grass and the jumping lamb come in together. Viewed by itself, the acrobatic activity of a lamb seems about as inconsequential and meaningless a performance as can be conceived. Perhaps this is why it is so delicious to watch—that it is all pure farce. While you are watching a lamb standing perfectly still with that pathetic look of inquiry upon its face that marks the young of most animals, you might think that it was wondering why its brief summer of life should end as mutton, when suddenly it proceeds, by a series of comical “cavorts” on four stiff legs, to nowhere in particular; and when a number of lambs have collected together, if one goes leaping off all the others must go leaping too.

A PLAYGROUND PRECIPICE.

It may seem ridiculous that a lamb should practise jumping all day in order to develop into a peaceful, stolid, steady-going sheep later; but the young of all creatures reproduce the characteristics of their kind in an earlier stage of existence, and an expert evolutionist who had never seen or heard of sheep before would only need to watch lambs at play for a few minutes to decide that their wild ancestors haunted mountains. There is a pasture here, some fifty acres of land, without a bank or a crease in it anywhere except along one margin where a cart-track runs. The wheels and the horses' hoofs have cut this strip of soil into four ridges; and no matter in what part of the fifty acres the lambs may have to leave their mothers, it is to these ridges that they

all come to play. There is a difference, moreover, in the ridges. While three of them are flat-topped throughout their length, and bordered by ruts scarcely a foot deep, the outside one for a space of ten yards, where the cart-track has been raised over a slight dip in the ground, has a narrow sloping summit and a fall on the outside varying from one to three feet. This is the only "precipice" in the field, and the number of lambs that are always pushing for foothold upon it is amazing.

NATURE'S WISDOM IN SHEEP.

When the precipice is tightly packed with lambs they all start in a jumping procession one way, those that are squeezed out jumping across the rut and back again, bumping others down the "precipice" on the other side. But the procession never goes far on the comparatively flat and uninteresting track beyond. It soon halts, and, the rearmost lamb becoming the leader, they all come back jumping along the ridge again. When the sheep were wild animals of rock and cliff, this jumping exercise on miniature precipices was almost all the training which the lambs needed to fit them to face the perils of their mountaineering life. And what a wise provision of nature it is that the young should unwittingly rehearse the actions of their ancestors! Nature proceeds by such slow change as to seem almost changeless; and in a state of nature it is almost certain that any marked alteration in the conditions of any creature's life must

be accidental and transient. How fatal it would be, in that case, if the young did not inherit their ancestors' habits!

THE MONTH OF DAFFODILS.

March 20.—Real spring, that is to say the spring which turns a smiling face towards summer, began in the very middle of March in 1902. In one small garden, within the space of ten minutes, the first white butterfly, the first queen wasp, and the first big bumblebee, appeared together on the morning of the 16th, and from that day one might almost have planted a yard measure in the ground by the side of the Crown Imperials, and marked off each day's advance towards summer in inches of the lilies' growth. The third week of March is early, of course, to think of summer. On any morning we might awake to find that spring, cowering before a north-east blizzard, has turned her chilled face back towards winter again. The roses had suffered once already, and the shrivelled black buds still showed how returning frost caught them just as they were unfolding their tender leaves. So, if we "dance with daffodils," as the poet bids us, one day, we may as alliteratively "limp" with them as "Lent lilies" the next; for the daffodil is the flower of a month which is sometimes lamb and sometimes lion, but seldom either for long.

THE FIRST WHITE BUTTERFLY.

The first white butterfly is the most fallacious of all spring signs, for his appearance in March proves only that his chrysalis had been accidentally subjected to artificial heat. When the caterpillar is full grown in autumn it often crawls long distances to discover a suitable niche for its long winter sleep. Sometimes it finds its way into a hot-house, where it is "forced" like a tulip, and emerges as a butterfly at Christmas. At other times the caterpillar hangs itself up, to turn into a chrysalis, in the fatal security of some sunny corner in a human dwelling, or chances upon a convenient crevice in the outside brickwork of a greenhouse chimney. Here it is protected from the retarding influence of the frosts of winter, and by the end of February has so nearly approached maturity that it only needs a day of warm spring sunshine and a mild night to complete the job, and next morning a brand-new white butterfly is flickering about the garden, deceiving us with the notion that summer is just round the corner.

A SUPERSTITION WITH A MEANING.

The belief in some districts that you will have "cruel bad luck" all the year if you cannot manage to kill the first white butterfly that you see in spring often sends a comical hue-and-cry down a village street. Nothing looks much more absurd than the attempts of the aged and inexpert to catch a frightened butterfly, and the chase usually ends in a row of disappointed faces peering over the fence

as the butterfly zigzags off to safety down some enclosed cabbage garden. But, as is often the case, the superstition has its utilitarian basis. Individually, of course, it is silly to suppose that a year of bad luck follows failure to catch a particular specimen of a common butterfly in spring; but collectively a rural community would gain much if they could kill all the early white butterflies, for these are the parents of the more numerous white butterflies of July, and the grandparents of the host of unsavoury caterpillars which convert September's cabbages into fine lacework, and sometimes incontinently appear at table, served up with the vegetables by a careless cook. Such an accident is certainly "cruel bad luck" for the diner; and superstition tells us how to save the cabbage and escape the caterpillar by killing the early butterfly.

THE ETHICS OF QUEEN-KILLING.

Killing the early wasp is another custom sanctioned alike by reason and tradition, although there may be room for doubt whether wasps do not do more good by slaying flies than harm by eating man's fruit and stinging its owner. But so soon as you begin to calculate profit and loss in natural history you are lost in a wilderness of doubts. Why, for instance, should we account the slaughter of flies as a benefit conferred by the wasp upon mankind? That we dislike flies is true; but they, in their turn, perform a very useful scavenging work. And against such doubtful service of the wasps there is the certain and

obvious loss of ripe peaches and grapes, as well as of dignity, when one has to duck and dodge to avoid the buzzing menace.

THE FOUNDATION OF AN INSECT CITY.

Yet the life of the queen wasp is so admirable as an example of self-sacrifice and devotion to the good of the race that one cannot help regretting that our interests clash so fatally. Since the lingering rays of autumn sunlight glinted upon her armour of gold and black, as she buried her jaws deep in the honeyed recesses of the ivy bloom, she has slept in some dusty crevice, amid cobwebs and woodlice, and now she buzzes abroad, seeking a sheltered spot where she can dig the foundations of the city that is to be. Unaided, she drags out grains of earth and stones, till she has tunnelled a secret cave, from whose roof she builds downwards a cluster of hanging cubicles of *papier-mâché*, manufactured by her own royal jaws. In each she lays an egg of a "worker," or neuter female—being able to discriminate, as necessity arises, between the sexes of the eggs that she will lay. The grubs from these eggs she feeds with care until they become mature wasps—her own handmaidens—who set to work enlarging the cave, and filling it at the same time with more paper cubicles, hanging tier from tier, and the whole surrounded with quintuple defence of paper walls. In the new cubicles the queen wasp now lays eggs, both male and female, in due proportion, and when this second brood reaches maturity multiplication quickens a hundredfold, so

that in autumn, if she survive so long, the original queen wasp may be surrounded by twenty thousand of her descendants. That is why man kills her betimes.

PROMISE OF APPLES AND NUTS.

March 27.—If unwelcome storms should not come later at critical times, it was evidently going to be a good year for apples;* for the hedgerow elms, which were flowering profusely, always seem to obey the same laws as the orchard trees, and in the previous year one foresaw the failure of the apple crop because the papery bloom of the elms had been thin and meagre. With the apples go the nuts also, and ~~seldom in recent years had there been such a wonderful display of dangling catkins on the hazels.~~ Within an inch or two of these swinging clusters of yellow tassels, a little higher or a little lower on the same twig, you will always find a stout bud with a number of ruby-red points protruding from the tip. These are the pistils of the female flower waiting for the pollen from the wind-swung catkins to fall upon them; and so many of them as are thus fertilized, and meet with no accident thereafter, will produce nuts. A gentle breath of wind rippling the myriad plumes of a nut avenue on any sunny day in March adds bushels of nuts to October's store.

* It was uncommonly good in Norfolk.

THE SALLOW AND ITS GUESTS.

The sallow, on the other hand, which is simultaneously displaying its yellow catkins in sheltered places, dares not trust to the fickle wind. The male and female flowers—the glorious yellow catkins on the branches which rustics gather as “palm” at Eastertide, are the male bloom—inhabit separate trees; and a female plant situated, say, at the eastern end of a group of willows would have a poor chance of seed if the wind should blow persistently from the east during the short blooming period. For this reason trees that rely upon the wind have to produce an exaggerated supply of pollen, which, in the shape of fine yellow dust, is carried immense distances and sprinkled over great tracts of country. Often when the wind blows you can see it flying in dense puffs like smoke from the flowering branches of the pines. The sallow, however, employs the more trustworthy agency of insects, whom it pays with honey for their services in carrying pollen grains, by accident, from flower to flower. So on any sunny morning you can find the willows so thronged with bees that you might almost suspect a swarm in the bushes, while at night the same clumps are the moth-collector’s happy hunting-ground. Here he finds again many of the same furred moths whose eyes glowed like opals under the light of his lantern on the ivy-blossom in autumn; and these survivors from a long winter sleep are nightly reinforced by new hosts of the moths of spring.

SUMMER'S SKIRMISHERS.

For it is the small life of nature that is always first to follow on the heels of departing winter, like swarms of light skirmishers harassing the rear of a retreating foe. In December or January the sun has only to peep out for an hour or two to bring forth the gnats, dancing airily in defiance of winter above their strongholds in the furze bushes; and even before all the snow has departed from under the hedgerows you may go out on a thawing night and find fat caterpillars comfortably feeding on the grass tufts above the lingering snow; and on the bare twigs of the hedges the lantern's light reveals the winter moths conducting their December courtships with complacent confidence in fate. And when the tide of the year's war has definitely turned towards summer's victory—though, as in another war that we wot of, belated mishaps or even "serious reverses" may always be in store—the myriads of little things, that skip and crawl and fly, multiply unceasingly. The bees are busy among the crocuses—and so, alas! are the sparrows—spiders creep out of crevices in the wall, and hosts of armoured wood-lice sally by night out of the cracks in old tree-trunks; moths crawl from their empty pupa-cases at the roots of trees, and dry their wings upon the bark; while at noon the sunlight flickers with small life that flies.

SPRING AND BIRDS' NESTS.

The cyclist realizes the awakening of Nature when, whirling between quiet hedgerows, he gets a small beetle in his eye in every hundred yards; for the

beetle, though small, secretes a powerfully acrid juice, which makes each experience a moment of agony. The starling knows all about this awakening of nature, too, for when the sun shines you can see him walking about and making absurd skips up into the air to catch the little insects that are joyously whizzing into life all over the pasture. A week earlier some of the small bats resumed their fluttering beats under the overhanging willows and between sheltering avenues ; and on the day after, the first egg, a song-thrush's, was found in the garden, and the first wild duck's egg was discovered by the trout-stream. This, however, was picked up from the edge of the water, where the first wild ducks' eggs are very commonly laid and wasted. The same thing probably happens much oftener than we suspect with the eggs of other birds, when the weather vacillates in spring, and the male birds lose their interest in family affairs.

IMPATIENT HUSBANDS.

For, however small a share he may take in the subsequent care of the eggs, it is generally the male bird who fixes the date and place for nesting. When the weather is fine and warm he is full of fuss about the business, inducting his wife to their new home with as much officious pride as any human bridegroom. When the nest is ready, and he thinks that it ought to be filled with eggs, he becomes more and more insistent that his wife shall do her duty. Among tame pigeons, or the half-tame wood-pigeons of the London parks, you may often see the male

bird hunting his wife round and round, in and out, and giving her a peck whenever he catches her up, simply because he wishes her to go back to the nest and lay an egg. The wild sheldrake, though he does not proceed to violence, gives his wife no peace in similar circumstances, for he stands in front of her and wags his head at her until she consents to retire into the second-hand rabbit-burrow which they have selected. Other birds have other ways ; and in confinement a cock canary will sometimes peck a hole in his wife's head and kill her out of sheer domestic impatience.

APRIL.

DISCOURAGED BIRDS.

April 3.—Though April came in not unspringlike weather, chilly winds held back the bursting buds and cooled the ardour of those birds which had only half made up their minds to begin housekeeping. Our swans, for instance, with the instinct, perhaps, of ages of Arctic experience rendering them especially sensitive to discouraging weather, gave up the idea promptly. A couple of weeks before they had been full of pomp and ceremony as they marched, or, rather, waddled, around, one behind the other, inspecting all the impossible nesting sites about the place. One morning they even went so far as to pull a heap of straw about, emerging from their labours with undignified wisps and strands draped about their necks and wings. But when the wind settled in the north-west they returned at once to the pond and the pasture, behaving as though the idea of such a thing as nesting had never entered their minds.

A CHECKED MIGRATION.

The same chilly north-west winds checked the incoming stream of migrants. Chiff-chaffs, blackcaps, wheatears, willow wrens, sand-martins, swallows, and sand-pipers had all been seen more than a fortnight

earlier ; but subsequent progress had been much slower. Indeed, it seemed more than possible that this country, especially the western half, would have far fewer summer visitors this year than usual. When the wind blows from the south-east in spring we get more than our fair share of birds ; and some, such as nightingales, are carried to districts further west than their usual breeding-places. In such years their song may be heard many miles beyond the "nightingale line." When, however, the wind blows persistently from the west, shifting now and then to north-west, the birds are carried eastward, and many that would otherwise have nested in Britain make their summer homes in Denmark and Scandinavia. Similarly, so far as Britain itself is concerned, the direction of the wind determines whether the surplus of bird-life shall gravitate towards the east coast or the west.

REGULAR TRAVELLERS.

At the same time the regularity with which successive waves of the floating population of birds pass over the same spots in autumn and in spring is remarkable, no matter in what quarter the wind may lie. These are mostly the young birds of the previous summer, which drifted southwards in flocks as winter advanced from the north, and are now following its retreat northwards by the same stages. Thus at the end of March the same marsh pastures, which had been filled with multitudes of starlings for a while in autumn, were once more dotted all over with crowds of birds, gabbling and gobbling after each other, although our own resident starlings had neither

increased nor diminished in numbers. At the same times, both in autumn and spring, that the starlings multiply on the marshes, flocks of jackdaws arrive on a wooded hill near at hand ; for one or two days a sloping stubble affords lodging to a host of traveling pipits ; and a wave of small tits, gold-crests, and tree-creepers passes through the woodlands.

FILLING UP THE GAPS.

It is probably from this floating surplus of last year's broods that winter's casualties among the resident bird of each locality are made good. From the ranks of the travellers our widows may obtain husbands, and widowers select wives, while pairs drop out here and there to take possession of unoccupied but inviting nesting-sites. Thus, in gradually diminishing numbers, the residue travel further and further north, till the last of them reach the limit of their race's range. No doubt, too, these last travellers are mostly birds which were reared at the farthest point, while those which fall out of the ranks by the way succumb to the temptation most readily in the vicinity of their old homes ; but that there are exceptions to these rules is shown by the reappearance of birds in localities from which they have been absent for years. The rules explain, however, how it is that, although in autumn and spring large numbers of many kinds of birds are passing to and fro, each district in summer is always found to have just about its usual complement of birds of all kinds, so that naturalists can always tell where and in what numbers each local species may be found.

YOUNG AND OLD.

That it is the young brood of these partial migrants which travels is clearly shown by the immature plumage of the flocks which come to us in early autumn, though most of them, when they return in spring, are resplendent in breeding finery. The autumn starlings are very "brownish" birds, compared to the sheeny, speckled creatures which gleam in the spring sunshine. In the autumn flocks of chaffinches there is scarcely one very rosy breast, but before they leave the fields in spring every cock bird is brilliant almost as a bullfinch. Thus we may take it as a general rule in birddom—perhaps it may be extended above birds to man himself—that the young birds readily travel from home to seek a livelihood in hard times; whereas the old birds cling to their homes as long as possible, and return to them at the first opportunity. The gulls, for instance, which remain in spring upon the fields along the east coast, are mostly birds in immature plumage, because almost all the old birds have gone back to their homes to breed. It is, no doubt, from this surplus of immature birds that, later in the season, an old bird who happens to lose his mate so quickly finds a new one.

A NARROWING HORIZON.

April 10.—We see less, though we hear more, of the birds in summer than in winter. In leafless December a bird is almost as conspicuous inside a hedge as out of it; and when a thrush flies into a

tree he does not disappear as would be the case in summer, but remains plainly visible to any naked eye that turns that way. Besides, there is nothing on the bare earth and bare hedges to attract your attention, and so your eyes are always ranging far afield, while from horizon to horizon the thin veil of leafless trees scarcely prevents you from noticing any bird that flies. But in summer the country closes in upon you. Every tree in leaf shuts out a whole wedge of landscape from view; and every hedge presents an impenetrable barrier to your eyes; while in the fields the crops, and even the growing grass, spread like a green sea over the land, and the small life of the countryside sports under the waves, out of sight.

SPRING'S MULTIPLIED INTERESTS.

Another, stronger, reason why you see less in summer of the birds and most animals, is that there are so many things of interest all round you in flower and leaf, and the ubiquitous activity of insect life in bee, butterfly, and beetle. In March, when you looked across the pasture, you could count every skylark in it; now you notice that, besides the daisies and dandelions in the lush grass, the cowslip buds are opening, and here and there the green is already starred with the pale blooms of the cuckoo-flower. You stray a few steps from the path to gather some, and a skylark, whose presence you never suspected, gets up under your feet. Along the hedge where a month ago a yellowhammer preceded you by short flights, or a wren creeping about

the roots like a mouse, would have attracted your eye, now you look down upon the heaven's blue of the early speedwell ("Buxbaum's Veronica" is what botany books give as its "English" name!) and the clustered bronze and pink of the dead-nettle, while to the starry daisies come several kinds of small bees, all with interesting histories of their own.

SMALL LIFE OF THE HEDGE-BANK.

Close by, the glossy blue oil-beetle scrambles heavily along, intent upon laying eggs from which will come active little creatures that will jump on to the bees and be carried home to the nests, where they will eat the bees' eggs and grow fat upon the honey. Here, too, already sit the red two-spotted ladybirds, waging war upon the pestilent plant-lice and laying eggs that will produce little things like spotted grey crocodiles, which will eat the plant-lice even more voraciously than their parents do. And here is a drinker caterpillar—a handsome fellow in fur of black, white, and gold, who has waked up from his winter sleep and is basking his full inch and a half in the spring sunlight. And as you stoop to look at him you discover that the ants are out again and are running busily up and down the hedge-bank. So you go on, noticing at each step something that "was not here yesterday." Only now and then the flight or note of a songster, or the discovery of a nest with eggs, reminds you of the birds who for months had almost monopolized your attention; and where you saw a dozen hares in February you will scarcely see two in mid-April.

RETURN OF THE SWALLOWS.

The swallows constitute, of course, one large exception to the rule that birds are more in evidence in winter; and when in April your eye follows the wavy flight of the first swallow—who is probably a sand-martin, to be precise—you wonder how this striking feature of the life of the air can have been absent all the winter and been missed so little. When our thoughts are with the robin and the holly, it is hard to realize what a haze of whirling bird-life covers the whole country again when the swallows have come. In the evening the change is almost greater. Where in winter you would have had to take a lantern and search the hedgerows for sign of insect life, and would have found none there unless the air was mild, in spring the twilight hedgerow flickers with filmy life, and the bats go whirling in and out among the crowd, taking toll of their fellow-passengers at every snap—which you can plainly hear—of their little jaws.

THE MULTIPLYING BATS.

Until the middle of April the bats are comparatively few; but they increase in numbers so rapidly with each spell of mild weather afterwards that one is almost inclined to class them among the migrants of the season. There is, of course, no reason why bats should not migrate, if it would do them any good. They seem to be almost tireless on the wing, and with the wind in their favour would find no difficulty whatever in crossing the Channel or the Straits

of Gibraltar ; but since it is the habit of their kind all over the temperate zone to sleep through the winter in some crevice, they would gain very little by travelling a thousand miles only to sleep at the end of their journey, as they could have done at home. Thus they occupy a very different position from that of the swallows, who must migrate or die ; and the occasional discovery of large lumps of sleeping bats, hundreds being sometimes crammed together in one place, suggests that many more hibernate than appear abroad in early spring. Indeed, it is one of those nice adjustments of nature which so neatly match cause with effect as to encourage belief in the theory of design, that in early spring, when there are very few insects on the wing in the evening, very few bats should be abroad to eat them ; but as the insects multiply, more and more bats appear.

A RECOLLECTION.

April 19.—Spring has arrived, and any one of us may now wander afield with fair hope of seeing swallows, hearing the cuckoo, and, if he direct his steps aright, listening to the nightingale also. But this happens to be the one day in the year when a little English wild-flower may be allowed to monopolize our thoughts : for the primrose on Primrose Day is absent from the thoughts and buttonholes of few. Twenty-one years ago from yesterday—*heu fugaces!*—I stood on the wind-swept Brighton Downs, where large bodies of Volunteers were going through manœuvres which would probably fill their successors of to-day with mild surprise.

THE PRIMROSE LEADER.

Why recall this? Because no matter how the men suffered from that searching east wind, that chilled them to the bone, and filled their smarting eyes with smoke and grit, the one thought in all minds all that day was, "This wind will kill him!"—for all knew that Lord Beaconsfield was clinging to a slender thread of life that the keen east wind must sever. And so it was: for on the morrow a great hush fell upon each noisy troop-train as it reached the radius of the black-bordered placards spreading outwards from London, announcing that the great earl was dead. None could have been blind to his foibles; few, perhaps, trusted him implicitly; but because he strove according to his lights, and often against odds, to hold the honour of the Empire high, men and women of all classes and many ways of thought wear the primrose to his memory. And it is a very worthy flower for the occasion. Whether it was the "favourite flower" of Lord Beaconsfield, or Prince Albert, or both, it might well be the favourite spring flower of any Englishman. To its presence we all owe some of our happiest recollections of the beauty of sylvan nooks in England; and neither west of Calcutta nor east of San Francisco does memory recall any natural scene more lovely than a woodside primrose bank "at home" in April.

A DISORDERLY FLOWER.

In other ways the primrose is one of the most interesting plants in botany. We often abuse scientists for multiplying species, and drawing distinctions

where scarcely any difference exists ; so it comes rather as a surprise to learn that botanists confess themselves unable to draw a distinction between the primrose and the cowslip ! Every village school-child could show them the difference in colour, shape, and arrangement, both of leaf and flower. But suppose you find a shady wood full of primroses, leading down to a rich hollow where oxlips—a kind of glorified cowslip—grow, and this, in turn, sloping up to a pasture where cowslips abound, if you examine the ground on each side of the oxlip haunt, you may find some plants so like cowslips that you cannot tell the difference, and on the other side plants which are exactly midway between oxlip and primrose. You might expect at first that there could be no means of “splitting” so uncompromising a difference as shown in the habit of oxlip and cowslip to bear their flowers in a bunch, as it were, at the top of a single stalk, while the primrose seems to supply a separate stalk to each flower ; but the half-and-half plants get over the difficulty by producing their first lot of flowers on apparently single stalks, thus showing that they are primroses, and then, by sending up one strong stalk with a lot of flowers branching from the top, showing that they are not primroses.

“PRIMLIPS AND COWSROSES.”

It is rather curious that the primrose, whose name suggests propriety and prudery, should cause the genealogists of the vegetable kingdom all this trouble to sort out its mixed connections by marriage ; because the primrose is more often quoted than any other

flower for the perfection of its arrangements to secure fertilization by exactly the right type of blossom. If you look at to-day's bunches of primroses, you will see that some of them are "pin-flowers," that is, they have the pistil visible in the middle of the flower, like the head of a slender green pin. Others show their anthers there instead. There are, indeed, three distinct types of primrose flower which (Darwin says) so arrange the relative lengths of anther and pistil as to ensure that each individual bloom shall only be fertilized by its exact affinity. The object, of course, is to secure "cross-fertilization"—a prospect as soothing to troubled science as "that blessed word 'Mesopotamia'" was to the old lady in the story—in order that, for one thing, undue variation from type may be checked. And then for the abandoned flower to go and freely produce an assortment of children which might be anything from a "primlip" to a "cowsrose!"

GAME BIRDS AND EGG-STEALERS.

April 24.—Most of the pheasants began to lay by the middle of this month, preceded by a day or two by the French partridges, and followed by the English partridges, which are always a week or two later than the "red-legs." With the filling of the game-birds' nests the keeper's anxieties are doubled: because, according to him, there are few creatures in fur or feathers which will not take toll of the eggs upon occasion. Besides Nature's recognized egg-stealers—the jays, magpies, crows, etc., which will hunt the hedgerows and the covert sides as methodically as

birds'-nesting boys—human poachers are now classed among the keeper's worst sorts of vermin, since the craze of "big bags" has so firmly seized our game preservers, that immense numbers of eggs have to be bought for the overstocking of the coverts. But worse even than the human intelligence which the poacher brings to the work of supplying those boxes of eggs to some friendly dealer at a distance who "asks no questions," is the cunning of the stoat and the weasel.

STOATS' RAVAGES.

Day and night these little beasts are on the prowl, but especially in the early morning; and though every entrance to a covert may be guarded by a trap and baited with an egg, they soon seem to learn that it is wiser to leave that egg alone and find others for themselves. Not that they confine themselves to game birds' eggs. No nest is too small or too cunningly hidden for them, and, since they can climb like cats, not many upon their regular beats escape. Across the trout stream near one covert a narrow pole has been fixed to prevent the cattle straying through the water from one pasture to another; and this pole has become a regular highway for vermin that wish to cross the water. For about thirty yards from this pole one bank of the stream is tufted and fringed with bushes growing so densely over the water as to form ideal nesting-sites for many sorts of birds. Every year every bush contains nests, but I doubt whether a single brood of young is reared in any one of them, so carefully are the bushes hunted by the stoats and weasels that come across the stream.

Indeed, one wonders that the birds themselves cannot tell that there is something wrong with the place from the fact that so many of last year's nests contain mummified remains of old birds that were caught and killed upon their nests:

AN EVASIVE MARAUDER.

In the bush nearest to the pole two nests were built this year. One, a moorhen's, was close to the water; but the first egg had not been laid twenty-four hours before it was sucked, causing the nest, of course, to be deserted. The other nest, a thrush's, was near the top of the bush, and the bird had laid her full number of eggs and commenced to sit before fate overtook her. Now her half-eaten body lies upon the broken eggshells. In the next bush a yellowhammer commenced to build; but a nest so near the ground had no chance whatever; and the unfinished outline remained as silent evidence of a tragedy. Finding so many rifled nests and murdered birds makes one almost as bitter as the gamekeeper against the stoat; but even when you catch him up a tree in the act of birds'-nesting, it is no easy matter to bring this evasive criminal to justice. One famous woodcock covert, where the firs grow close and dark out of dark spongy soil, is a favourite haunt of the stoats, which climb one fir tree after another in search of birds and eggs. Here you may sometimes catch sight of one, looking almost like a squirrel as it slips nimbly from branch to branch; but even though the tree may be isolated, the pace at which the little beast slithers down twenty feet of fir-trunk and leaps off

into the undergrowth mocks one's clumsy human movements. If you hit the tree a whack with your stick within two yards of it you have done well ; for the cunning little vermin of course makes a point of coming down "the other side" of the tree, and while you are getting round he has finished his descent and gone.

THE GUILTY HEDGEHOG.

Many keepers, however, give the first place in iniquity, where game birds' eggs are concerned, not to stoats and weasels, but to hedgehogs. On a gibbet near here one hundred and sixty-four dead urchins swing in a row in the wind, and poison the air for many yards around ; and every one of them, the keeper says, was caught in a trap baited with an egg. This is only circumstantial evidence, of course ; but there is so much more to the same purport that one cannot acquit the hedgepig of being an inveterate egg-stealer. This is a great pity, because he is one of the most engaging beasts, more completely repaying a little kindness in captivity with confidence and affection than almost any other animal. He has such a quaint air, too, of being a respectable sort of farmer as he plods along a hedgerow, turning his flat feet up behind the tails of his overcoat, that one dislikes regarding him as a poacher. But, alas ! he is worse ; for should a sitting fowl or pheasant be so unlucky as to be caught upon her nest by this slow-footed marauder, he will make a horrid meal of parts of her.

UNSUSPECTED CRIMINALS.

Another creature not usually suspected of poaching is the moorhen ; but, according to some keepers, this bird is almost a greater sinner than even the hedgehog. They offer, of course, the usual evidence for the prosecution—that if you bait a trap with an egg near the water-side you will most likely catch a moorhen ; and certainly, if a moorhen will eat eggs, its stealthy habit of creeping in and out of all sorts of undergrowth and herbage must give it plenty of opportunities of finding them. While, too, it is never wise to take the keeper's word in such matters—for he is never so happy as when he is adding bird or beast to the list of "vermin" to be killed at sight—still at the same time experience of wild life makes one almost ready to believe that any creature which habitually feeds on life will eat anything that it is strong enough to make short work of. Until you have seen the act, you would hardly believe that a song-thrush will kill and eat the newly hatched young of smaller birds, or that a domestic hen will kill and eat a baby partridge, or that a duck will eat little chickens. But these are all facts, though we can, if we like, put them down as instances of individual depravity.

MAY.

THE NIGHTINGALE'S AFFINITY.

May 1.—The habits of the nightingale curiously justify the action of our scientists in classing him with the robin and the thrushes rather than the warblers. In migratory habit he would seem to be a warbler, and in charm of song he is nearly approached by the blackcap warbler, although there is no real similarity in their styles of music. But young nightingales have spotted plumage like young robins and thrushes, and naturalists have quite rightly taken this as decisive evidence of kinship. It is a well-known principle that the young of any species reproduce the characteristic features of that species at an earlier stage in its history, and the spotted feathers of the young robins and nightingales show that both of these birds are descended from a common ancestor who was spotted, and, if you watch a nightingale in the daytime, you will see at once that it only wants a different voice and a red waistcoat to be a robin.

JUST LIKE A ROBIN.

Usually supposed to be a shy bird, the nightingale is really bold and inquisitive. It is true that, if you suddenly approach, it will drop down into the thicket

and continue to make a croaking sound, very like the queer voice of the corncrake on a smaller scale, until you retire. But if you sit quietly in any nightingale haunt at any hour of a sunny day, it will not be long before one of them deliberately takes up a position in full view and sings snatches of song at you in exactly the manner of a robin. Like a robin, too, it will presently drop from its exalted position and reappear a little nearer, perhaps on the ground. Then you can see that it stands in the same attitude as a robin, and, like that bird's, its upturned tail is seldom still. Indeed, from the way in which the tail is elevated and rhythmically waved up and down, with slight heaves of the body, you see the kinship of nightingale and robin with larger birds of their order, such as blackbirds and fieldfares.

A MATTER OF VOICE AND WAISTCOAT.

On the ground, too, the nightingale hops quickly for a few steps and then pecks vehemently at the ground, exactly like a robin or a thrush, and every now and then springs up to catch a fly in the true robin manner. Also, if you continue to sit still, it will continue to draw nearer, often singing a snatch of song from the ground or a low bush; and every time that it reappears in view it will be a little closer than when you last saw it. Sometimes, if there happens to be a bush within a yard or two of your position, you will suddenly discover that it has managed to slip into it from the other side; and at these close quarters it still follows the precedent of the robin, except that whereas the latter

“chit-chitters” at you, the nightingale utters its grating croak. Presently, tiring of this, it slips out of the bush again and reappears in full view a few yards off, alternately singing and catching flies. At such times, when its back is turned and you cannot see whether it has a red breast or no, there is only a slight difference in the tinge of ruddy russet of its plumage to tell you that it is not a robin; for in manner, attitude, and outline, the two birds are almost identical.

ANCESTRAL FRIENDSHIP?

In this habit of the nightingale to draw closer to a human being and to elect to sing in full view near at hand, we see the ancestral habit which has made the robin the friend of man, almost leading one to regard that friendship as of date more ancient than the separation of robin and nightingale into distinct species. In that case it might have been the habit of migration which caused the first separation—as, possibly, it separated the whinchat from the stonechat—and that in the nightingale’s evident interest in man we see the relics of an ancient habit of familiarity, now broken by the fact that as a migrating species it no longer requires human kindness in winter. In one respect the nightingale would be as fully qualified as the robin for intimacy with man, because it is intensely conservative in returning year after year to the same spots which it and its forefathers have always haunted. Any one familiar with a neighbourhood of nightingales might mark out a number of fifty-yard circles, within every one of which, on a fine day at the end

of April, he will be as certain of hearing a nightingale singing as of finding bushes; and in every one of those circles there will be a nightingale's nest in May, though half a dozen such circles might be clustered together in one spot, and you might have to go for miles, through apparently suitable country, before you came to another.

CONSERVATIVE BIRDS.

This conservatism is not peculiar, however, to the nightingale. It is rather the rule among migrants, and you may almost count with certainty upon hearing the jangling song of the first sedge-warbler in exactly the same bush where you first heard it in the previous year. It is always a solitary sedge-warbler, too, who seems to be singing almost incessantly in the hope that his tardy mate will hear and join him. Although it is very rarely that such an established station is deserted, so long as it remains suitable, new birds frequently appear in new places, and it depends upon their success in finding mates and rearing families whether these become established stations too. Very often they fail, however, and last year both a green woodpecker and a pied flycatcher tried to establish themselves in a field where neither of their kinds had been known to breed before; but after singing and calling for a day or two, one in a very loud and the other in a very weak voice, both gave up the attempt to find a mate, and drifted away.

DELAYED MIGRANTS.

May 10.—The first week in May, 1902, was not such a period as one can look back upon with especial pleasure. The smiles and frowns of our coy spring alternated too rapidly, and the frowns had been so very, very chilly. What might have been the busiest week of bird migration in the year had seen no feathered traffic at all, because the persistent wind, always in the north and east, had been dead against the little travellers. The fieldfares, assembled still in their winter flocks, waited on the east coast in vain for the favourable wind which should carry them to their Arctic homes, where they could nest in safe colonies among the birch trees of the furthest forest range. No thrush-bird can remain to build "in colonies" in the land of the birds'-nesting British boy, to say nothing of egg-stealing British vermin. So the voice of the fieldfare is unwelcome in England in May. It speaks too harshly of inclement seasons; and the adverse wind which keeps him here holds back the house-martins when they ought to be with us, twittering above the windows as they repair their mud nests under the eaves.

SUCCESSIONAL SWALLOWS.

It would be interesting to know why the sand-martin, a smaller, slimmer bird than the house-martin, elects to brave our English climate the earlier of the two. Of sand-martins, and also of swallows, we had

almost our full number before the beginning of May. They managed to slip through with favouring winds in the middle of April; but the house-martins, always later, were caught by the north-east wind somewhere on their road. Thus they were delayed until they were passed on the road even by some of the swifts, which, though larger and more powerful in flight than any of our "swallows," are also more delicate, and postpone their arrival until the spring sun has warmth to draw insects into the upper air, where the swifts range all the summer on a higher plane than the rest of British birds.

THE THRUSHES' CARES.

The cold winds which delayed our summer visitors seemed, however, to have had no depressing effect upon our resident birds; and, although the swallows and sand-martins looked miserable enough hawking all day for flies over the surface of grey wind-swept water, even the little summer warblers in the shrubberies and hedgerows found abundance of insects taking shelter there; while thrushes, blackbirds, and starlings fare sumptuously in showery weather, when the ground is soft and worms are many, in spite of the driving wind. Besides, they have had other things than east winds to think of. A nest full of nearly fledged young thrushes leave their parents little leisure for considering the state of the weather; and when the brood has left the nest it is even worse. What with the labour of still finding worms for them, the perpetual worry of keeping them, if possible, out

of danger, and the excitement of preparing for a second brood, no wonder that so many thrushes on our lawns behave at this season as if they were distraught.

NEST ROBBERS.

Luckily for the missel thrushes, the hoodie crows managed to get away with the same favourable wind that brought the sand-martins and swallows, the nightingales and whitethroats ; for with all his alertness and pugnacity, the missel thrush, nesting in conspicuous places, has a hard time when he has to defend his eggs and young from the hoodie crows. The plovers must gain equally by the absence of the hoodie crows, but they have still a pestilent enemy in the gull. Although the mature gulls have departed to their breeding-places, the younger birds, both of herring and common gulls, have remained on the coast fields. These birds do not get their adult plumage of grey, black, and white until they are three years old, nor do they breed till then. So they are free to remain loafing over the fields in search of eggs or any kind of helpless prey. Although their feathers, mottled with brown, betray their youth, they are as keen-eyed and sharp-beaked as their seniors ; and the plover nesting in exposed, open places on the bare earth has reason to dread the approach of these sea pirates, who know as well as Leadenhall Market the excellence of plovers' eggs.

THE PLOVER'S BRILLIANT DEFENCE.

To do the plover justice, however, there is no sign of dread in the warm reception which he gives the robbers. He is weaker and smaller than they, and all through the winter he has been robbed of worms even by the little black-headed gulls, which the herring gulls have robbed in turn ; but in defence of his nest he makes more than a good fight of it. Watching the graceful evolutions of the gulls at sea, one is inclined to credit them with unrivalled wing-power ; and certainly in loafing through the air, always ready to swoop downwards at any angle, sea-birds may be supreme. But you have only to see how a peregrine falcon, smiting her way to her stronghold in some seaward cliff, will lightly turn aside and strike a fleeing screaming sea-bird into the waves far below, for mere sport apparently, to realize that consummate ease and supreme power of flight are not identical. The peregrine was never fledged, however, that could lightly strike down a plover in mere sport ; so, when the herring gulls, perhaps six or seven pirate craft keeping company, discover the site of a plover's nest, you may see some brilliant flying indeed. Like a whirling meteor the plover swoops and dashes at the foremost marauder, quickly scaring him away ; then he turns straight in his arrowy track and dashes at the next ; sometimes, when the urgency of the case demands it, converting what was a lightning swoop at one gull into a sidelong swerve at another, thus checking two enemies at a stroke. And it is no use for any of them to try to remain while the plover is

on guard. Darting from one to the other in a maze of curves and flashes, he soon sends the whole gang of marauders loafing away.

DELAYED MIGRANTS.

May 15.—Whether caused by icebergs or not, the persistent north and east winds of spring continued to be very unfavourable to the migration of birds. Turtle-doves, however, managed to reach their homes even on the east coast by the 10th or 11th, when there was, indeed, a temporary mitigation of the wind; but, besides being birds of extremely powerful flight, they are not dependent upon flying insects for their food, like house-martins and swifts, flycatchers and nightjars. To these birds cold winds from the east or north mean starvation, so they wisely hold back from the bleak regions where they were born. Not that the insect-eating birds which wander twice a year between Africa and, say, Norfolk, have much freedom of choice in the dates of their departure or arrival. They go when they must, and come home when they can. The cold north winds of autumn take them south, and the warm south winds of spring bring them back again. When south winds blow in autumn they stay very late, and when north winds blow in spring they arrive very late, because they cannot help it.

PROVIDENCE AND EVOLUTION.

At first sight it seems a fortunate coincidence that the same cold winds which sweep away the insects that should feed the birds also save the birds

by carrying them to warmer countries; while the same warm winds which bear the birds back to us bring out hosts of insects for them to eat. Coincidences like these were quoted by our pious ancestors, in their ignorance of the laws of evolution, as "special dispensations" of Providence. We need not, however, be any the less religious because we see that the habit of migration in birds has grown up to fit the circumstances, and that the circumstances were not specially ordained to accommodate the habit. Almost all kinds of birds born in the north temperate zone, or higher, and many kinds of mammals and fish, migrate more or less—the more being proportionate to their necessity, and the less according to their ability to support themselves at home in winter. Wherever, too, there are mountain ranges, miniature migrations take place in spring and autumn between the snow-line and the plains. Thus in the winter in Kashmir you may see the great red deer travelling down the valley high-roads from the mountain forests, wandering, like tame goats, into the villages sometimes.

HOW BIRDS LEARNED TO MIGRATE.

But the migrations of four-footed beasts are necessarily limited, while birds have gradually found that by making use of the winds they can extend their range from northern regions, where the delicious summers hum with insect life, to the tropics, where winter comes as a delightful respite to those sun-baked lands. Thus our feeblest feathered folk, following the wind, which compels them in autumn and

aids them in spring, are able to live all the year in a climate which exactly suits them, because it suits the myriads of small things upon which they feed. They escape both the grip of Arctic frost and the blistering heat of the "hot weather" in the Tropics; for Englishmen instinctively refuse to call that season of suffering by any name so suggestive of outdoor happiness as "summer." But the original migrations of birds were not, of course, nearly so extensive; and the process no doubt commenced by the surplus bird population of the year drifting with the wind in search of food in autumn, and returning to their homes, the wind again aiding them, in spring. Some would be carried wide on the return journey, and travel to distant regions, thus gradually extending the northern range of their kind; while in winter those that travelled furthest southwards would fare best, thus extending that range too.

DELIBERATE TRAVELLERS.

Thus regarded, the migration of birds becomes a process of simple and easy growth, each kind discovering, by the working of natural selection, the distances and the kind of weather, that is, the approximate date, for travelling which suit it best. But to some extent, of course, birds exercise free will in their movements. Thus, rising higher and higher as they fly to sea, they will refuse to pass out of sight of one coast till they can see the opposite one. From this results the habit of travelling birds to work up or down a coast-line till they reach the narrowest crossing. And in returning in spring they have the

deliberate intention to find their old homes if possible, and are guided by landmarks towards it. This brings us back to the turtle-doves, which arrived, in spite of the wind, on the 10th or 11th; for with the powerful flight and strong homing powers common to the pigeon tribe, they could afford to travel even hundreds of miles against the weather, guided, probably, by landmarks ranging in size from rivers and ranges of hills at a distance, to familiar groves and clumps of trees at the last. Seeing a pair arrive, winging their arrowy way across the valley straight to a tiny coppice where they lived last year, curving their graceful flight upwards at the last to perch together on, perhaps, a familiar branch, one could not help a great feeling of relief and sympathy. It almost seemed that one had come home from Africa one's self.

THE TURTLE-DOVE'S GIFTS.

The loud clapping of the wings which the turtle-dove, like many other pigeons, delights to make when "showing off," indicates immense power of flight, for one can hardly realize the sudden force with which feathers must be struck together to produce so loud and sharp a sound. But it is not for migration that the turtle-dove needs so much wing-power. Feeding in winter in company, and feeding very greedily, in spite of the gentle delicacy which we associate with the name of the bird, it has often to travel far for meals; and to cross some miles of open country without seeing a hawk is a rare experience. That is why a turtle-dove has acquired such wing-power; and in this habit of travelling far

from home to feed we see also the origin of its homing ability. Lastly, we see how these two gifts enable it to find its way back to its breeding quarters through hundreds of miles of adverse weather.

DEAD SWALLOWS.

May 22.—When the cold winds were blowing, and driving rain-clouds shut out the sunshine day after day, we thought ourselves badly used, and our inclement Bank Holiday was a national grievance. But what was our hardship compared with that of the swallows, the featherweight athletes of the air, who thought so little of the perils of a thousand miles by land and sea, if only they might be with us again in the spring? Day after day, week after week, since their arrival, they struggled against hard fate. Each dawn saw them stretching their numbed wings in feebler flight, to and fro, to and fro, over the cold-rippling pond, in the teeth of a cold north-easter. Dusk fell upon them, still working hard for life, to and fro, to and fro, over the darkling water. And now, on the writer's table, lie three dead swallows picked up in a room whose leeward window had been open through the storms of Whit Monday and Tuesday. If three swallows in their desperate extremity found this one open window leading to quiet shelter where they could die in peace, how many little corpses are lying in their more familiar haunts in outhouse, barn, or cowshed?

A MODEL FLYING MACHINE.

In flight the swallow appears black, and although you may see something of the beauty of its colouring in the sunlight, when it has settled near, you cannot realize what a dainty jewel in feathers is this that comes so far from over sea to nest or, too often, to die in England, until you have it in your hand. The glossy blue of its back, shading gradually to black on wings and tail, harmonizes so perfectly with the auburn forehead and throat, which is again encircled with steely blue, contrasting clearly with the whitish buff of its underside, while the outspread tail of black, with windows of white on every feather, recalls in hue and dainty outline the "swallowtail" butterflies of the sunny lands from which it came to die in our cold, dull spring. But the chief beauty almost of the swallow is its shape. The tiny legs and feet, which cause its shuffling gait in walking, scarcely break the tapering outline of its body, which, with long knife-bladed wings, seems, from the pointed tip of the tiny beak to the tendril-feathers which quiver on each side of its tail, the very ideal of an aerial missile.

MORTALITY OF BIRDS.

From its perfect outline and great expanse of sharp-cut wing—it is more than seven inches in length, with a wing-spread of almost a foot, and weighs a fraction of an ounce—one can understand not only how the swallow manages to fly with the

wind from continent to continent, for that is comparatively easy, but also how in bad weather it maintains that almost ceaseless flight in search of food from dawn to dusk. That in some seasons even these powers fail and thousands die, seems one of the saddest facts of British bird-life; but it is one of the ordinary risks of the swallow's existence—one of the factors which keep the species within its proper bounds. For it is safe to say that nature has now of every species about as many as can be accommodated. Raising two broods in summer, a pair of swallows may increase by autumn into a family of twelve; and since swallows cannot increase in numbers from year to year, it follows that ten out of every twelve die before the next breeding season. Of every six swallows that fly about in autumn five must die by the spring! To us, who measure happiness by long life, such mortality among our bird friends seems awful.

LARGER FAMILIES, SHORTER LIVES.

Swallows, of course, are no worse off than other birds which rear as many young. Indeed, the sparrow, although he steadily increases in numbers and always seems to thrive everywhere, must die even more quickly, for he produces more young. Yet it is not easy to guess by what means at least five-sixths of the sparrows of London are killed off annually between the summer and the spring. It is from no defect in vitality that they die, for all kinds of small birds which are kept in cages and carefully protected will live for many years. They will do

this in a wild state also sometimes—even the swallows—for marked birds have been known to return to the same place to breed year after year. Some large birds, too, like gannets, which do not breed until they are several years old, and then only rear one young one at a time, obviously must live at least five or six years on the average, otherwise the species would have died out. It may, in fact, be taken as an inevitable rule that the earlier any kind of bird breeds, and the more young it produces, the more quickly it will die.

INDUSTRIOUS THRUSHES.

No shadow of impending doom, however, seems to cloud the spirits of our cheery friends in feathers as they set to work to demonstrate the briefness of their lives. The inclement weather which killed the swallows did not interfere with the supply of worms, or prevent the fledgling thrushes' feathers from growing; so during the last week or two almost every evergreen in the garden has been discharging young birds on to the lawn, where they sit in sheltered corners like frogs, and chirrup for worms. And already their parents are hard at work again, getting ready for the next family. This causes fresh alarms and excursions in the shrubberies; for though thrushes often tolerate each other as near neighbours—their nests have sometimes been found so close as to be actually woven into each other—they are often as quarrelsome as blackbirds about their spheres of influence. They fight, however, very differently. While blackbirds advance and retire, set to partners, and

change about, like a couple of rustics in an ancient village dance, thrush combatants dash at each other, and then flutter straight up in the air together, slowly ascending, beak to beak, ten feet high or more, and as slowly descending. Like the black-birds, however, they seldom come quite to blows.

THE RETURN OF THE HOUSE-MARTINS.

May 29.—With a favourable change of wind nature's aspect has completely altered. Last week we were lamenting the fates of many swallows, which had come so far from over-sea only to die of hardship in an English spring. This week we have rejoiced over the safe return of our belated house-martins. They are due to arrive each year before the swifts; but these had been with us for some time, while only a few stray martins had been seen travelling singly up the coast with the later flights of swallows. So we feared that the main body of the martins might have met with disaster by the way, and that the remains of last year's mud nests under our eaves might remain unrepaired and empty, save for the untidy wisps of hay mixed with feathers which the sparrows insist upon stuffing into them. But just in advance of the south-west wind one of the rightful owners arrived, and commenced an excited skirmish with the sparrows for his old nest. In this he was defeated, so he appropriated another one close by, where, a few hours later, he was joined by his mate, with much glad twittering on both sides.

A HAPPY COUPLE.

This would seem to show that the martins, though they travel in flocks, also travel—in the flocks—in pairs, because it would be very improbable, if they flew in haphazard order, that a particular husband and wife should arrive a day before all the others. But it would also seem to show that when they are nearing their journey's end, and are guiding their course by familiar landmarks, the desire to reach home is stronger than the tie which keeps the pairs together; for the male bird had pushed on ahead, had finished his unsuccessful skirmish with the sparrows, and selected another site, before his wife arrived. Then the two together, by working hard till evening, managed to rebuild the whole floor of the nest, and it was very pleasant to hear their conversational twittering as they nestled together upon it, as though to test its strength. They did not, however, expose the damp mud to the risk of collapse under their combined weight during the night, but retired elsewhere to sleep.

MORE BIRDS THAN NESTS.

Next day half a dozen more birds arrived with the wind, among them the proper owners of the nest which the first-comers had appropriated, and a prolonged struggle for its possession ensued. After wheeling round in mazy chase of each other, excitedly twittering all the time, the birds would fly up to the nest two at a time, grapple at the threshold, and fall almost to the ground before they let go of each other. The next instant their partners would similarly meet,

and grapple, and fall. How the long fight ended it is impossible to say, for house-martins are so alike that one cannot guess whether the pair now in triumphant possession are the first-comers or the original owners. The incident shows, however, that those who wish house-martins to dwell in peace and multiply under their roof-ledges, should take the precaution in winter to break out the floor of all the temporarily abandoned nests. These are then of no use to the sparrows, and when the martins return, each comes easily into possession of its own. On the third day so many more arrived that, barring later accidents, the colony should be even larger this summer than it was last year.

THE LAST OF THE MIGRANTS.

The 25th, 26th, and 27th of May practically brought the immigration of summer birds to an end, for the strong south-west winds carried not only the delayed house-martins, but also the butcher-birds and fly-catchers—always the last to arrive—to the furthest corners of the East Coast. They appear to have carried away, too, the last of the lingering fieldfares, most reluctant of all our winter visitors to risk crossing the sea unless all the circumstances are favourable. With their departure, and the arrival of the fly-catchers—it is only on rare occasions that these birds meet on English soil—we may be said to have settled down for the summer. Indeed, the presence of the fly-catcher makes in itself one of the most reliable signs that summer has really arrived, because its food consists of summer insects, and it

cannot travel where these are not. The warblers, which find insects in all the hedges, and the swallows, whose power of wing enables them to sweep large areas for food, may venture northwards in spring, whatever the weather may be, journeying by stages, and feeding as they go. But the fly-catcher is a summer trifler by confirmed habit. He can only feed at leisure and from abundance. On a selected perch he sits, turning his head and slender bill this way and that, watching the crowds of summer flies go by, and every now and then selecting one of a kind that suits his digestion.

THE FLY-CATCHER'S SKILL.

Very upright the fly-catcher sits, and his pendulous tail maintains the rhythmic beat almost peculiar to birds which catch insects by sudden dashes, since this motion of the tail and slight agitation of the bird's equilibrium maintain it always in readiness to dart forward at sight of prey. And the swoop of the fly-catcher is usually a very finished performance, commencing with an elegant dive from his perch, with direction and distance so accurately judged that the capture of the fly and the upward curve which carries the bird back to his perch again almost seem part of the original movement. When, however, the fly-catcher chances to miss his aim, he seems almost as flustered and excited as a sparrow chasing a moth. Such hurried dashes and zigzags after the frightened insect ensue—not always ending in the success of the bird—as to emphasize by contrast the deadliness of that first dive, which rarely misses, and looks so easy.

JUNE.

WHAT THE BIRDS SAY.

June 5.—If you would see much of bird-life you must understand what the birds say, and at this season, when their minds are full of emotions and excitement—in love-making, nesting, and taking care of inexperienced children—they have many things to say. Passing between our old barn and the pond, for instance, you may hear a wagtail, which has perched on the wire fence that keeps the cattle from the swans' nesting-place, utter an insistent note quite different from his ordinary call. He is telling his wife to sit close on her nest, because there is a man wandering about. By walking in different directions and listening carefully to the anxious bird, you can play with him that old children's game, making him call out, "Warmer! warmer!" as you advance in the right direction. But, as you happen to know all about the nest which is built under the axle of a broken-down cart behind the barn, you need not agitate him.

WARNING THE WIFE.

Were it not for the pestilent human habit (as it would seem to the wagtail if he understood it) of drawing conclusions from our own and others'

observations, this trick of the wagtail's would be a very perfect defence. If one had not, two weeks ago, seen the wagtail through a field-glass carrying a feather to the broken cart, one would never have thought of hunting among the rank nettles that grow round it until one found the cleverly hidden nest; and now you would not know that the hen bird was sitting there upon eggs if you did not understand the conversation of the wagtail. The chief danger to small birds' nests near the ground is that the hen may be startled off at an enemy's approach, and so betray it. Warblers' nests, for instance, are most easily found in this way, because the male bird, foraging among the bushes, very seldom detects your presence in time to warn his wife. But the wagtail, feeding in the open, and seldom very far from the nest, which is generally built within call of the water-side, sees you coming, takes up a position from which he can watch your movements, and keeps his listening wife fully informed of every step you take.

THE THRUSH'S SECRET.

As you enter a coppice an old thrush suddenly flies up into a tree, and with a single sharp croak tells you that his children are quite close to you. It was not, of course, his intention to tell you anything of the kind. He simply shouted to them to keep still, if they valued their lives; and it is the same pestilent human habit of putting two and two together which makes you pause on the shady threshold of the trees and peer about till you see

them all five sitting, some on the ground and some in bushes, like stuffed frogs, with their beaks in the air and their large round eyes fixed upon you. Except that they are born with the instinct of implicit obedience to their parents' instructions, one would think that it must be a dire ordeal for the young thrushes to sit there motionless when they see your great eyes glaring at them, and your lips, parting in a smile, revealing terrible rows of teeth that could crunch up a young thrush with ease.

DISREGARD OF MAN.

But the experience of ages has proved it to be best for young thrushes that they should sit still when they are told to. Thus they escape many prowling enemies. Weasel or cat, stoat or fox, which would pounce upon them at once if they tried to flutter away, will pass on, with eyes probably fixed upon the excited father thrush up in the tree. Only man discovers the trick, but the more one sees of the influence of evolution upon the habits of wild things, the more one learns that man hardly counts as a factor at all. He is, indeed, regarded as a dangerous animal, but no provision is made to guard against the power of reason, which renders him dangerous in a way peculiar to himself. It is a poor compliment which Nature pays us, perhaps, but it seems to be a fact that she has hardly begun to discover that we differ in any material respect from cats or weasels. A few creatures like the robin have become familiar with us and trust us; while others, which are habitually killed for sport or in defence of

our crops, have learned the meaning of a gun, but if a man and his dog take a walk together, nature at large thinks much more of the dog than of the man.

OUR PARASITES KNOW US BEST.

Our furred and feathered parasites, such as rats and house-sparrows, respect our powers more than wilder creatures do, for human ingenuity has almost been exhausted in the effort to invent really effective traps for either. They have learned to suspect human mechanisms and contrivances, though the rat is generally guided in his judgment of an apparatus by his sense of smell. If the taint of human fingers lingers upon it, he gives it a wide berth; wherefore we toast the cheese that baits the trap, in order that its powerful aroma may overwhelm our own. The sparrow, guided by his eyesight alone, extends a wider caution to everything which looks like a possible contrivance for catching sparrows. String he especially abhors, wherefore we stretch strands of cotton about our seed-beds and rail the "bird-tables" in winter with string, which keeps off the sparrows but not the invited guests in feathers. Only at this season, with the burden of large families to feed, the sparrow lays aside his caution and is easily caught, even in cage-traps, and, as a measure of extermination, these are doubly effective now, because, when the old birds are killed, the young broods die. But it is cruel.

THE NOISE OF SUMMER.

June 12.—The country is more noisy at this season than at any other. The birds are still in full song, excited by the jealous rivalries of nesting-time ; and, in addition, most of the common gregarious kinds have already turned out upon the world one brood of vociferous youngsters, who add their voices to the general hubbub. From every corner of the garden comes the fat chirp of the young sparrow, persistently protesting that he wants more grubs, but loth as yet to go and find them for himself. Along almost every hedge, too, you are preceded by the jarring chorus of family parties of young missel thrushes, or the sibilant alarm notes of immature starlings, who are already collecting in small flocks. These, when reinforced by the later broods, will form squadrons of the vast army corps of starlings which assemble in autumn at selected halting-places, filling the air with the roar of myriad wings, and also filling it all round their roosting-places with an unspeakably sickly stench. It is worth while taking a good look at a young starling in summer. In his plain Quaker suit of darkest neutral tint, with no hint of colour in his bill, he is totally unlike his parents, but he represents them as they used to be before sexual selection gave them their primrose-yellow bills for summer wear and the fine gloss of purple and green upon their speckled plumage.

CHANGING BIRD FASHIONS.

It is worth while looking carefully at the old starlings, too, and noting how the purple and green are distributed upon head and neck. If the head appears all glossy green, the bird is the old British "common starling," now growing less common annually, like the once "common" pheasant, which has no white ring round its neck. This was believed to have been introduced into Britain as a table luxury by the Romans, or even later; but the recent discovery of its bones among the kitchen refuse of prehistoric people who lived in caves shows that its title of old English pheasant rests on better precedent. Now, however, it is almost everywhere giving place to the ring-neck pheasant, of quite late introduction, and from some preserves, where once it lorded the solitudes alone, you may see large bags taken without one plain-necked bird among them. In the same way the Siberian starling, with purple instead of green gloss upon its head, has been pushing its way from the East close upon the heels of its forerunner, the "intermediate starling," whose head is partly purple and partly green, until among a group of starlings in England you may sometimes fail to see a single "common starling." Whether this change is due to the fact that the starlings from the East are more robust than our old Western form, or whether the starling prefers purple to green as the complexion of wife or husband—whether, in fact, we here see natural or sexual selection at work—there is no evidence to show.

THE LINNET'S GOOD AND BAD POINTS.

Besides the noisy young sparrows, missel thrushes, and starlings, whole companies of new-fledged linnets make music in and around the gorse-clad hollows where they were born, while their parents are busy with their second nests. Some birds, for example the wren, keep their nests so scrupulously clean that one is inclined to wonder that they should not always use them for a second brood, instead of going through all the trouble of weaving so elaborate a structure over again. But there is no room for such wonder in the case of the linnets, for the little birds are allowed by their parents to make the nest so terribly dirty that every member of the family should be ashamed to pass that way afterwards and see it. But we need not go further than humanity to find beings who have no shame in such matters, and even seem to prefer a dirty home to a clean one. So we must not blame the linnets, who is such a dapper little gentleman in dress and manners. Besides, he has a voice which, though small, is so faultless in music that one might class him as the drawing-room amateur in a bird company, where the nightingale would be a famous tenor, the blackbird a street ballad-singer, and the starling a comic vocalist, who occasionally gives evidence of powers that would make his fortune if he would only abandon his patter songs and tricks of mimicry, and take to serious music.

SILENCE AND SONG.

From their first entry into the world the young linnets utter no note that is not musical, though the same cannot be said for the other youngsters who add their voices to the summer chorus. Later, when the last broods have been launched from their nests, a general hush falls upon the country so far as bird-music is concerned. The season's rivalries are over, and the yellow-hammer is almost alone in continuing to repeat his simple song, as though he could not help it. Later many of our songsters commence to sing again. The starling and the thrush quickly weary of silence; and the skylark seldom needs more than a burst of sunshine after cloud at any season to send him aloft quivering with music to his feather-tips. But for a brief period about harvest-time the melodies of bird-land are few indeed, though there is noise enough in the calls and alarm-notes of the gathering flocks of gregarious birds. And it is interesting to note the connection between the gregarious habit and the habit of making a noise. Some of our finest songsters are birds which live solitarily or in pairs, according to the season; but, except when rivalry induces song, or when, for a few weeks, anxiety for and care of their young prompt them to use alarm-notes and call-notes, they are almost absolutely silent. Gregarious birds, on the other hand, are hardly ever quiet. They cannot hop from one twig to another without a "tweet" or a twitter, to let the others know their whereabouts, nor can they view the approach of any potential danger without outcry of warning to the rest.

UNSEASONABLE PAIRS.

June 19.—In every field now one puts up pairs of partridges—during the winter two partridges make a “brace,” irrespective of sex ; during summer we may call each male and female a “pair”—but this, though welcome enough in February, is a sad sight in June. It means that the bad weather of the first fortnight of this “month of roses” drowned out many of the partridges’ nests, and when the shooting season ought to begin there will be many coveys of birds no bigger than sparrows, and scarcely able to flutter after their mother over a hedge. This is inevitable, because, although from eggs laid now fairly-fledged coveys might be on the wing by “the First,” there is always so much uncertainty in the affairs of big birds like partridges, which nest about our frequented fields, that many will meet with second failure, even if the weather henceforth should be propitious, and so will prolong their breeding season into our shooting season.

WASTED LABOURS.

For the bad weather came this year at the worst possible time. Everywhere on the east coast, at any rate, the partridges’ eggs were on the point of hatching, so that the whole time of incubation of the spoiled eggs had been wasted and the hen birds have been enfeebled by their close imprisonment on duty day after day. Gamekeepers generally believe, too, that the actual loss is greater at such times, because

the birds desert their eggs most easily when they are "sprung"—that is, when the young are chipping their shells to get out. This seems contrary to natural instinct, and therefore improbable; for it stands to reason that Nature will not more willingly sacrifice the valuable asset of a nestful of young than an easily replaced clutch of new-laid eggs. If time is money in human affairs, it is priceless to breeding partridges, who have so scanty a margin to spare at either end of the breeding season.

THE SITTING PARTRIDGE.

There may, however, be this foundation for the gamekeepers' belief—that when the eggs are being chipped the mother partridge is less able to protect them from the weather. When the eggs are all sound and solid she sits down upon them close, and her closely overlapping feathers keep out much cold and wet that would otherwise reach the eggs along the surface of the ground. When the young are chipping their eggs she sits much higher—stands over them, in fact. If you visit a nest frequently you can tell by this attitude of the sitting bird when the critical period has arrived; sometimes, indeed, the difference is marked enough to make her visible at a distance upon her nest, where previously, sitting low, she was safely screened from sight. So it may easily happen that when the hen partridge, in obedience to the instinct which tells her to give her delicate little chicklings free play in the first great trial of their lives, stands lightly over her eggs, she unwittingly

admits driving damp that chills their little lives, and at last forces her reluctantly to abandon the cold and clammy ruin of her home.

BIRDS THAT UNDERSTAND EACH OTHER.

When a pair of startled partridges go whirring and clucking over the hedge, it is interesting to note that only gregarious birds seem to understand the meaning of their alarm note, and to take warning thereby. A company of starlings feeding at a distance in the meadow will often rise at the sound and follow the partridges over the hedge, not because they are afraid or know what is the matter, but simply because the partridges called out "Danger!" Flocks of larks in winter will similarly take alarm from the sharp cry of the snipe as it comes twisting over the stubble from the low land whence you scared it; when the pewit calls out the golden plover flees; while flocks of all sorts of shore birds take the whistled advice of the flitting redshank and flit too, as the shore-gunner sees, to his vexation, daily. Birds which spend their lives solitarily or in pairs take little notice, on the other hand, of other birds' warnings; and you may often see this very plainly in winter time, when adversity drives rare birds into the strange company of sparrows round your doorstep. At such times every one who takes an interest in the bird-pensioners that crowd round the house for food must have noticed with pleasure that when, on alarm being given, all the common sparrows, chaffinches, and greenfinches, accustomed to communal life, go off

together like a shower of stones into the shrubberies, a shy bird like the bullfinch, or any rare and lonely stranger, will remain with the friendly robin, a little unnerved, perhaps, by the sudden flurry around them, but waiting to use their own judgment of the circumstances.

BIRD LANGUAGE AND ITS USES.

In the alarm notes and calls of gregarious birds we hear, in fact, the beginning of "language" among birds; and from it we can see how man owes his gift of speech, in the first instance, to his communal habits. And this "language" of birds is useful to us, too, as in the case of man, in determining their relationships and investigating their ancient history. From words of daily use we can discover the human family to which any given race of human beings belongs, and we can trace from them also many of the earlier habits of the race. So with birds. When the blackbird flies chattering out of the hedge he reminds us at once of the chattering cry with which fieldfares, flying from field to field, keep their trailing ranks together. Even the very young blackbird, who cocks his tail and chatters the first time he leaves the nest, after the manner of the fieldfare as well as of his own father, tells the same story, namely, that in ages long ago the fieldfare and the blackbird, as well as the thrushes and the robin, who also cock their tails and chatter upon occasion, were descended from a common ancestor, who cocked his tail, and chattered as an alarm note, because he was a gregarious bird. We also know that this common ancestor wore a suit of

speckled brown ; but as to when his descendants adopted other fashions, and when some of them, like the blackbird and robin, ceased to be gregarious, we can only vaguely conjecture.

THE SEASON'S WANE.

June 26.—Though we could count the “summer” days that we have had upon our fingers, the countryside is already full of the foreshadows of autumn. Large flocks of peewits are gathered on the uplands, young birds of the year. They have brownish faces, instead of the clear white complexions which, contrasting with the glossy black of brow and crest, made their fathers so conspicuous earlier in the season, when they stood, bowing to attract the intruder’s attention, on some ridge many score yards away from the threatened nest. Presently these flocks of young plovers will be reinforced by the late broods and by their parents, as well as by hosts of immigrants from east and north ; and thus will be formed those vast army corps of peewits which wheel and turn with faultless but spontaneous discipline in autumn and winter over the fens and marsh lands. There, too, will be myriads of starlings, with aerial skill as marvellous, and numbers far exceeding those of the peewits ; and already for weeks flocks of starlings by the hundred have collected, and chosen the roosting-places, which, later, will be rendered filthy by tens of thousands.

COVEYS CUT TO PIECES.

We have a foretaste of harvest and autumn, too, in the corn standing up in the ear and the hayfields everywhere mown. Here, much too often, we come across the wreck of some autumn's hopes in a covey of tiny partridges scattered in the cutter's tracks—some shorn in half, others beheaded, others with legs cut off, and two or three, perhaps, outwardly uninjured but fatally crushed. In the old days the sweep of the scythe would shear some of the chicks asunder, and leave the rest unharmed ; but the modern mechanism of long blades, with double rows of iron sharks'-teeth, which work upon each other like scissors, leave little that lives upon the surface of the ground over which they are swept by horse-power. You may tenderly gather up the least mutilated of the tiny creatures, and carry them away in the hope of nursing them back to health ; but before you reach home they will be gasping out their bruised lives. The rustics who drive the machines are by no means callous to the fate of the little birds, for always, when a scared partridge rises with a whirr in front of the horses you will see the man pull up, and, leaping down, search among the standing hay for the nest or young ones. If eggs are found the machine is taken carefully round them and the gamekeeper duly notified ; but the partridge chicks hide so closely that to hunt for them in a two-foot tangle of grass and clover is almost hopeless. So the driver mounts again, and the machine goes on. Perhaps by good luck it misses the brood, and the mother, returning when it has passed, can remove them to safety before it has again

made the long circuit of the field ; but, if it happens otherwise, the ground behind the blades is suddenly covered on one patch with little, bleeding, bisected corpses, tangled among a swathe of fallen hay.

THE CUCKOO'S CHANGING CRY.

Before the hay is harvested the cuckoo has usually "changed his tune," but in 1902 he remained faithful to his "two old notes" longer than usual, and even in the last week of June "Cuckoo, cuckoo" was much more often heard than "Cuck-uck-oo" or "Cuck-uck-uck." When, however, the bird is excited by the presence of a female he will always introduce these variations into his song. Thus, on a sleepy summer afternoon you may be listening to several cuckoos, who at different distances seem to be perfunctorily iterating their message, when suddenly the loud giggling cry of the female cuckoo breaks from a tree near at hand. Instantly each of the males within hearing breaks into a jubilant "Cuck-u-coo, cuck-u-coo," followed by a laughing chatter, and you can see them trailing across the sky from their different distances and directions, straight and low towards the tree where the female sits, and when she flies from it several will follow her, "cuckooing" as they go.

VOCIFEROUS EXPLANATION.

While awaiting his lady love's arrival each male cuckoo has a "beat" of his own, which he traverses many times a day, calling from tree to tree, so that, having once marked his course, you can always

afterwards select a point which he will pass, where you can see and hear him at close quarters. As a rule, except when accompanying a female—when he seems to shout for sheer joy—the cuckoo is silent as he flies, calling only from certain points of vantage on his round ; but any small bird which attacks him “between trees” will make him call and chatter loudly. Indeed, at such times one cannot help thinking that the cuckoo raises his peculiar voice in order to disabuse the mind of his pursuer of the notion that he is a hawk. Not that the vociferous explanation always suffices to this end ; for you may see a swallow or martin swoop upon him time after time, eliciting a loud “Cuckoo-cuckoo, chak-chak-chak-chak,” at every swoop.

NO HAWK, THOUGH HAWK-LIKE.

But as a rule small birds take no notice of a calling cuckoo ; and his curious voice may thus be the reflex of his curious habits, and these, in turn, may be the result of his appearance, which, again, is the consequence of the dangers to which his ancestors were exposed. As large birds of feeble flight, they found safety from hawks in putting on the semblance of hawks ; this, in turn, exposed them to the persecutions of small birds, which drove them to wandering habits ; while, in default of a home as rendezvous, the bird gradually acquired a loud and distinctive cry to summon the female to him—when she should feel so disposed—and also to let small bird-dom in general know that, although he might look like a hawk, he was nothing of the kind.

JULY.

WASHING THE TREES.

July 5.—One scarcely realizes how much the trees in and round great cities suffer from soot until one sees them go up several shades in colour after heavy rain in summer. The lime trees particularly had been getting blacker and blacker with each day of the prolonged fine weather, because they are specially favoured by the green “blight” insects that produce the honey dew, which, covering the leaves of the lower branches, prepares a sticky surface to catch every particle of descending soot. Seeing that trees breathe through a multitude of tiny mouths upon their leaves—mouths which open and shut, and under the microscope show two lips almost human in outline, so constant is Nature to the types of mechanism by which she achieves her ends—one would think that the limes must have gone perilously near to suffocation when their leaves were coated with a sticky layer of sugar and soot. But Nature was not born yesterday, and impurities of the atmosphere have existed in all ages; so she has by experience learned to put most of the mouths of plants on the under sides of the leaves. Thus even the sootiest of limes has some millions of unchoked mouths to get along with during drought.

THE DEER'S SHOWER-BATH.

Like the trees, the deer in the parks and even the sparrows in the streets of cities look all the better for the thorough washing which they get when the rain drives down so heavily as to convert the densest tree-shelters into shower-baths. Luckily most creatures have a love of cold water; and during the heaviest of the summer's showers the dripping sparrows on the water-pipes chirped cheerfully to each other between thunderclaps; while as many of the deer lay out in the open as took shelter under the trees, soaking in the welcome rain after hours of stifling heat. The deer objects only to the raindrops tickling the hairs that line its ears; so it folds these back, giving itself a deceptive aspect of misery so long as the rain lasts. But the brightness of its coat when the sun has dried it again, and the exceeding friskiness of the fawns as they play prisoner's base and follow my leader backwards and forwards and all round their mothers, show that the rain has done them good; and you may take it as a safe rule of Nature that the unsophisticated tastes of creatures living under natural conditions approve whatever is good for them.

WHY MAN SHIRKS ABLUTIONS.

Only human beings, as a rule, indulge in "acquired tastes," with illnesses to follow, or shirk healthy ablutions. But men who do not bathe are only obeying a natural instinct too. Man has acquired the power of living in climates which are

naturally unsuited to him, by covering his skin with clothes; and the experience of ages has taught him to avoid exposure to the risk of chill. Every man saves his own life many times when, because he feels chilly, he buttons up his coat, turns up his collar, and crams his hands into his pockets, if he can do no more. Above all other chills, man instinctively and quite rightly dreads that which strikes him in the small of the back—the mere thought of cold water trickling down his back makes him shudder—because the spine, the mainspring of his life, is there least protected. On the other hand, civilization has taught us how, with warm water or the friction of towels after a cold bath, to avoid the ill effects of chill and at the same time gain the advantages of cleanliness. But we cannot always command warm water and towels, and, inasmuch as a chill is more dangerous than dirt, the natural instinct of man, living in a climate where clothes are necessary as a protection from cold, is not to bathe. A liking for ablutions is, in fact, a taste which man has artificially re-acquired, after he had lost it by migrating into regions where it was dangerous.

FOALS AND BOYS.

We are much too ready to forget that man is an animal, when we blame as personal defects in the individual what are merely habits acquired by the species for its own good in the struggle for existence. We find fault with a boy because he is always in mischief and never keeps still; but in this the healthy boy is merely copying the behaviour—the

antics, if you like—of his ancestors, and giving to his growing muscles the exercise that they need. Watch lambs or fawns or foals at play, and you will see that, although a feeble intelligence limits their ideas of mischief, they are exactly like boys. Two foals may be playing at biting each other's necks when one suddenly catches sight of an old newspaper on the ground. He takes it by the corner with his teeth and gallops off, half scared himself, and scaring all the others by its fluttering. Having nearly stampeded the whole herd, he pulls up by the side of his playmate and drops the paper, making the other jump, all four feet together, off the ground as if some one had banged it up under him. Then the two strategically approach the newspaper, starting back every time that a corner flutters in the wind, and carefully pawing short of it. In the middle of this they suddenly forget all about it, and fall to biting necks again, trampling the newspaper under foot in the scuffle. All this occupies perhaps five minutes; but if you watch them for a whole afternoon they will be doing something absurd and troublesome to the others all the while. It gives you sympathy with boys, and helps you to understand why a boy cannot pass iron railings without rattling a stick along them; why he hunts the cat, tears his clothes in climbing trees, and whistles through his fingers. He does these things because he is a young animal, and has to find out his relationship to everything around, as well as the capacity of each of his muscles. The boy who is not mischievous and disorderly is liable to make a poor specimen of *Homo sapiens*.

LATE PARTRIDGES.

July 12.—By this time you can always tell whether the partridges will be a ragged lot at the beginning of the shooting season. In Norfolk, which may claim pre-eminence as a partridge county, some coveys were already on the wing early in July; but many of the birds were still upon eggs, while here and there you might even see pairs of old birds loitering about together during the day, showing that their nests were not yet filled. By the beginning of September these later broods would be no further advanced than the forward coveys of July; and it would be poor sport firing into the brown of a mob of little birds no bigger than sparrows, and scarcely able to flutter over a hedge. Often, indeed, you may see the little fellows rise ambitiously in the wake of their clattering parents, and essay to top a tangled fence, only to land, like half-fledged sparrows, plump in the middle of it. But a surer pitfall for their feeble wings is a road with hedge on either side. Here you may sometimes, as you pass, observe the old birds skim lightly over both hedges, while the young ones, having done their little best to get over the first, drop in a shower on the roadway just in front of you.

FAMILY TACTICS.

Then it is pretty to see how the mother will instantly return, landing on the road some yards off, and scuttling about in semicircles, in such a state of frantic and noisy excitement as effectually to distract your attention from her children, while the more

prudent father contributes his share of the clamour from the safe side of the hedge. But the youngsters do not need his assistance. They vanished like mice into cover of the hedgerow herbage during the instant that their mother's flurried return attracted your eyes from them, and you may search for them in vain. If, however, as often happens, some were obliged to bolt into one hedge and some into the other, because you were in the midst of them, it is worth while to wait a little and watch the stealthy tactics by which the family re-forms its ranks. Sometimes the little mother goes clucking down the road, while the young follow on each side under cover, and presently slip out and join her, when they will disappear all together through the hedge, to find the cautious father on the other side. At other times the mother will slip through the hedge by herself, and, running down the further side, call her children from what she conceives to be a safe distance. Then you may see first one and then another of the little ones that are in the wrong hedge furtively emerge, and make a bolt of it across the road. Then all the clucking and cheeping ceases, and when you come to the gate you will need sharp eyes to catch a glimpse of any of that family again.

PRECOCIOUS FLIERS.

Though the baby partridges' power of flight is feeble, the wonder is that they can fly at all when scarcely a quarter grown, seeing that most birds grow almost to full size in their nests before their flight feathers are large and stiff enough to carry them a yard. To the inexperienced eye the newly fledged

sparrow looks so like its mother in size and plumage that you only discover its youth from its ineffectual attempts to rise from the ground. Yet baby partridges, scarcely bigger than sparrows themselves, can make a very creditable imitation of the whirring flight of a full-grown covey over considerable distances, rising and alighting almost simultaneously with their parents. If you examine a partridge's wing, you will notice that the curved quills are peculiarly hard and stiff. To these qualities are due the loud whirring of their flight, and also the fact that so heavy a bird can rise quickly from the ground, and to a certain extent the immature quills of the young birds share these powers.

NECESSITY THE MOTHER OF EVOLUTION.

How have young partridges acquired the power of flight? There is a well-known story of the man who described how his dog chased a beaver until it escaped up a tree. "But," objected a listener, "beavers can't climb." "This beaver," said the story-teller, "had to climb, the dog crowded him so." Though untrue of the individual beaver, the sentence might be paraphrased as the correct explanation of the way in which all kinds of creatures have acquired their various special powers. Animals which swim, fly, or climb, could not do so originally; but, as evolution went on, they had to, the others were crowding them so. So young partridges, feeding in the open, where they would be at the mercy of a swift animal foe, have to fly at an age when other birds, living safely in nests in trees and bushes, can do little more than gape for

food. The power was very slowly acquired, of course ; those young partridges which were at all precocious in their generation in the matter of flying having always the best chance of survival, and the pick of each generation becoming a little better than their predecessors.

REVERSING THE PROCESS.

Where partridges are living under perfectly natural conditions the process still continues, of course ; and though human science is too new a thing to have many records as yet of progress made by wild creatures within our knowledge, yet we may be sure that, on the average, the wild partridge of to-day flies a little earlier in life than the wild partridge of twenty years ago. There are no places in England, however, where partridges live under absolutely natural conditions. Polecats and martens, for instance—the worst of the weasel tribes—are nearly everywhere extinct ; large hawks and wild cats have been almost swept off the face of the country. So the risks that the partridge runs in early youth have been reduced, while the peril of the shooting season has increased for the birds that fly. So we may safely conclude that the tendency of modern evolution of the partridge is less to encourage them to fly when they are young than to discourage them from flying when they are old.

SUMMER HIDES HER AGE.

July 17.—Signs of waning summer multiply, though the countryside grows more brilliant with flowers day by day. Dame Nature, like a beauty

who feels that she is passing her prime, seems now to make her greatest efforts to seem young and gay. Her smiles are more generous than in the coy days of spring; and the florid opulence of her popped charms blaze to the public eye, where formerly only those who wooed her intimately found the maiden modesty of pale primrose and shrinking violet. To the young and inexperienced the lavish display of mature charms always suggests a heyday of happiness; but those who study Nature's moods read another story in this profuse advertisement of brilliant colour. The fixed flush of scarlet poppy differs not least from the changing tints of spring's tender blooms in the fact that it hides the dried stalks and ripened seed-pods of those earlier charms. It means that harvest is at hand; and when the short-lived beauty of the poppies falls, we discover that the life of the year is going, and that winter treads on the heels of autumn.

THE REMNANT OF A CHOIR.

When the poppies blaze among the yellowing corn, the cuckoo has gone and most of the song birds are silent. The yellowhammer still reiterates his changeless tune, and his cousin the cornbunting delivers his absurdly inadequate "Tit-tit-titter-r-r" with as much show and effort as any famous tenor. The whitethroat still flips himself up out of the hedge, and utters in descending the queer, zig-zag trill that accords so well with his erratic flight. The skylark, rising and falling in the blue, still winds and unwinds his silver chain of song from sky to earth;

and in some leafy nook you may chance to be the favoured audience of a bullfinch's whispered music, or may hear with delight the perfectly finished performance of that daintiest of rustic singers, the grey linnet. But what are these solos, interesting and charming as they are, compared to the full-throated chorus of the spring, when blackbird and songthrush, nightingale and blackcap, led a tireless orchestra whose overture greeted the first grey of dawn, and whose lingering finale dropped like liquid music into the deep silence of the night?

THE HOSTS OF YOUNG BIRDS.

More plainly, perhaps, than in blaze of roadside flowers and silent groves you may read the signs of passing summer in the flocks of sparrows that dust the hedges wherever field crops are ripening. London sparrows, with true Cockney instinct, insist now upon having an outing in the country; and in the farthest fields of Kent and Essex, farmers note with grim resentment the sooty tinge of town-bred sparrows which reinforce the vulgarly vociferous hordes that pass from field to field in advance of the harvest. For the sparrow's brief spell of "useful" work is over. He has fed his fat family full upon the lavish insect wealth of June; and as July draws to August he and they become voracious vegetarians at the farmer's expense. As noisy, and far more numerous in those places where they assemble, the starlings are already forming vast army corps that pass overhead to their roosting sites in reed-bed or osier-patch with a rushing sound as of the wind in a forest. Like the

irregular hordes of sparrows, these disciplined hosts of starlings are mainly composed of the first broods of the year. Their parents are still engaged with later broods, and the earlier families shift for themselves. So, with the instinct which characterizes the young of almost all species—boys and girls not excepted—when removed from parental control, they gather into crowds together, and are as noisy as possible all the time. If the truth were told, no doubt the young starlings in their myriads are vastly exhilarated by the rush and roar of their multitudinous wings as they wheel and sweep like thunder-clouds in the evening sky ; and even a mob of young sparrows probably chuckle and chirp excitedly over the pattering noise they make every time that they shower into a hedge.

NATURE'S FACTORY OF LIFE.

From the starlings and the sparrows one may learn something of the tremendous output of bird life from Nature's workshops every year, though one sees little of the work in progress. Like a great contractor who makes his millions by putting out his work to be done in pennyworths by women and children in slums and hovels, Nature seldom makes any show of her multitudinous activity by large factories or extensive plant. Here and there we see an untidy straw sticking out of a water-pipe, and wherever there is a hole in a roof you may have seen glossy starlings passing in and out with food ; but you hardly realize what millions of young birds

are thus produced in each English county, until the gathering hosts of July and August fill the fields and darken the sky.

PRETTY FAMILY GROUPS.

Less impressive but much more pleasing evidence of Nature's industry may be found in quiet nooks and corners where less obtrusive birds lead their families to learn their first lessons in the work of life ; and perhaps British wild life offers no prettier sight than the dainty fluttering of a group of goldfinches among the cornflowers. Their butterfly wings flicker in the sunlight as the young are taught pretty balancing tricks upon the swaying stems while they pick out the ripening seeds ; and amid the glorious blue of the cornflowers the flashing and dancing of yellow and black, white and red, makes a mixture of bright tints that is rare in British scenery.

THE CUCKOO'S DEPARTURE.

July 24.—Something has gone wrong with our seasons. North-east winds and rheumatic chills in early summer ; two or three torrid days when the wind set in the south ; and then, with a northerly wind again, in mid-July, snow was "reported from several villages in Suffolk," and overcoats appeared, like mushrooms, all over the country. The cuckoo, who ought to "change his tune" in June, saw no encouragement to do so in a month of midsummer which had intervals like March ; so he repeated his two old notes, "Cuckoo, cuckoo," until, without any

warning, another cold snap caught him in early July, and—wise bird!—he departed. It was no use for us to repeat that “in August fly he must,” for he had flown in July.

AN IDLE TOURIST.

For the cuckoo, alone among our migratory birds, has liberty to come and go when the weather suits. All the others are handicapped by nursery cares, which instinct forbids them to forsake; whereas the idle cuckoo has foisted his youngsters upon all sorts of small birds, and can make his grand tour of the Peninsula and Africa without encumbrances whenever he chooses. Does he know that wagtail and pipit, hedge-sparrow and warbler are looking after his children? Does he know that he has any children? “Cuckoo, cuckoo,” is the only remark that he has made, and it does not tell us much.

SIGNS OF THE SEASON.

But the cuckoo's untimely flight and the chill which comes into the air whenever the weathercock points to the north augur ill for the birds which are obliged to stay with us until the autumn of the calendar. We should have little love for the swallows, perhaps, if they left their unfledged families to starve in their mud-nests because a July or August night was chilly; but when a bad year's early precedents are followed it is a bad look-out for the swallows when August has passed into September. The weather may always change of course. The wind, for reasons which the meteorologists are never

able to explain, may become fixed in the south or south-west, and a genial autumn may follow the most treacherous summer that you have known for years, even though the signs all point the other way.

THE ORDER OF MIGRATION.

For the cuckoo was not alone in his warning of early winter. The autumn migration of other birds commenced many weeks before its time. The earliest of our migrants are, of course, those which breed within the British Isles. Birds which nest in Arctic regions do not lay their eggs until June, and their young are therefore unfitted for long voyages over land and sea so early in July. Indeed, other things being equal, you can tell by the date on which the first migrants of any species arrive upon our British coasts how far north they have been reared. Birds from the next parish arrive before those from the next county; and these, again, are far in advance of the voyagers from distant lands. As autumn advances, however, the second broods of British birds become mixed up with the first and only broods of birds which nest in northern lands.

STARLINGS AND HAWKS.

But the fact that the earliest migrants come from the shortest distance makes it the more difficult to say when the migration of the season has commenced. The birds of the next parish are our common English birds; and who shall say whether the thousands of starlings that have been congregating throughout July were reared on this or that side of a county

boundary? Local circumstances may, however, alter special cases; and in game-preserving districts the appearance of the sparrowhawk is a sure sign that the autumn migration has commenced. For the sparrowhawk is still a common British bird, although where the gamekeeper is supreme it cannot breed. Its nest would always be discovered and both birds shot. But the most carefully preserved districts are those which offer to hawks and falcons the best hunting-grounds in autumn and winter; and it is there that they invariably halt on their southward journey in the autumn. In spring we catch only a fleeting glimpse of the passage hawks, because then they are travelling with a purpose to reach their breeding haunts; but in autumn they loiter, stopping wherever young birds, which are so easily caught, are numerous and travelling southwards again only when tempted to accompany large flights of eatable birds that are fleeing before the north wind.

TRAVELLERS FOR FOOD.

So, when a few sparrowhawks reappeared where they had not been seen since spring, we knew that other young birds of the year must be already on the move, drifting southwards in July because, when the north wind blew, the air was chilly and insects consequently hard to find. In other years, when we have no such foretastes of cold autumn weather in midsummer, insects remain abundant everywhere, and the young birds remain to eat them, and there is no incentive for the young hawk to travel either, until, at any rate, the shortening days of mid-August,

with their natural chill of morning and evening and the dwindling store of insects of the season make the birds willing to move before every breath of a north wind.

PARTRIDGE PROSPECTS.

July 31.—Norfolk is our best county for partridges, and in all Norfolk few districts can compare with the few miles of coastland which lies east of Holkham. Here Lord Leicester has from time to time provided for Royalty partridge drives which have been famous for the numbers slain. But there is little chance of "record bags," when in midsummer you see many pairs feeding together without young, and most of the coveys are small. For this the intermittent bad weather, which commenced in 1902 with a chilly deluge when most of the eggs were on the point of hatching, is responsible. Often, however, a shooting season turns out much better than any one, before harvest, thought possible. The gamekeeper sees the evidence of wreckage among the broods reared in exposed places; but even the gamekeeper has but a vague notion of the number of partridge chicks that hide all day under the cover of standing crops. From many nests that he had marked in the cornfield hedge-rows he could count by the broken eggshells how many children the stealthy mother had led into the springing crop that covered the wide fields like a green velvet pile; but now, when the barley is flaxen and the wheat glows golden brown to harvest, he may as easily guess fifty under as over the number of "birds" that any forty-acre field contains.

DELAYED CHICKS.

Besides sadly reducing their numbers, the bad weather of early summer affected the output of partridge chicks in another way ; for, although three weeks and three days is the proper period of incubation, gamekeepers who had charge of large and well-stocked areas, and counted the days which many scores of partridges spent upon their nests, probably found no single case in which the birds came off at the proper time. A chilly season affects all birds in this way—a pair of swans, for instance, took eight days longer than usual to incubate their eggs—because, no doubt, the embryo bird within the shell develops slowly when deprived of some of the warmth which it needs. This would matter less if all the eggs in a nest were equally affected ; but the outer ones are delayed the longer, and often one finds that the mother bird has left the nest with part only of her family, leaving several nearly born to perish. Ducks that nest in the hedgerows are sometimes especially aggravating, when they come marching proudly but anxiously down to the water with a miserable following of three or four ducklings only, and examination of the nest shows that another day's patience would have given seven or eight more children. Yet perhaps we are wrong to be annoyed with the duck and call her "stupid." She knows better than we when the health of her young demands that they should be led out to feed, and by the experience of ages her race may have learnt that it is unwise to imperil the few that one has on the chance of more that may or may not come.

RETENTIVE LIFE.

Sensitive as birds' eggs are to chills, one very often despairs too soon of a temporarily abandoned "sitting," for the eggs may retain their life long after they have become stone-cold to the touch. Towards the end of May, a lad going home about eight in the evening found that a partridge had been killed on her nest and carried off by a cat, and next morning the keeper found the motherless eggs quite cold. He gathered them up, and, though he did not get home from his round until eight, put them under a bantam hen. He would not, perhaps, have thought it worth while had he known then what the boy came to tell him during the day about the killing of the partridge before eight on the previous evening; yet in due time nearly all of the eggs were hatched, and the keeper has the satisfaction of seeing the young birds getting strong on the wing in a field of barley a mile away.

THE KEEPER'S CARE.

For the keeper acts as a sort of deputy for Nature towards the partridges. In a nettle-patch by the high-road a partridge had made her nest; and since it is a common trick of rustic poachers to part all clumps of herbage by the road with a stick to see if a bird chances to be sitting within, the keeper supplied this bird with bad eggs, which he had collected on his rounds, to sit upon, and distributed her good eggs among other nests in safer positions. But it so happened that this partridge among the roadside nettles escaped detection by egg-stealers; and,

although she sat for weeks upon bad eggs, she is now the proud "mother" of the chicks that were rendered unborn orphans by the cat, while her own children are scattered in twos and threes with other "mothers" in different fields. This is one of the many ways in which a prudent keeper increases the year's partridge crop.

RETARDED NATURE.

Perhaps all nature, including ourselves, is equally retarded with the partridges' eggs when exposed to unseasonable chills. If we could calculate the fractions of an inch that a boy ought to grow in May and June, we might find that the standard of height in the British Army ten years hence will be affected by the same bad weather that made our birds late in hatching this year. Certainly all plant-life is visibly retarded by cold—and horticulturists have at last begun to turn this fact to useful account in producing fruit and flowers out of season more easily and surely than by "forcing" them—while birds are affected in other ways beside the time of incubation. The same swans, for instance, which were eight days longer in hatching their cygnets—the nest having been placed in a terribly exposed position—also began to moult their flight-feathers exactly eight days later than usual.

AUGUST.

THE CUCKOO'S FOSTER-PARENTS.

August 7.—Though the old cuckoos left us a month ago, you may still see the young ones clumsily flitting short distances between the hedgerows, each obsequiously followed wherever it goes by one or both of its attentive parents. When small birds have children of their own they lead the way, and by frequent imperative call-notes keep their family dutifully following behind; but when they have lavished all their affection upon a monstrous interloper, the positions are reversed. He wanders where he chooses, and they have to keep up with him as best they can, while at the same time finding food to fill his capacious maw. One might pity them, were they not so obviously proud of and devoted to their charge. Never before had they been blessed with so fine a child!

MISPLACED AFFECTIONS.

Indeed, admiration of the young cuckoo sometimes appears to lead other birds than his deceived foster-parents to feed him; and certainly in India one young koel cuckoo—a jet black bird, with eyes of

ruby red—is freely fed by many of the grey and black crows, in one of whose nests the egg was placed. But we have much to learn of such seeming aberrations of parental instinct; for although most birds exhibit hostility towards their neighbours' children—domestic fowls and ducks will kill them, for instance, as a rule—yet young house-martins are sometimes fed by three or four old birds, and occasionally birds of one kind will even voluntarily adopt children of another. Thus a robin has been seen to feed young thrushes, although, contrariwise, a thrush has been seen to eat young robins; while there seems to be no incongruity of species that a cat, a dog, or a hen will not overlook when “motherly” inclined. More curious still is the friendly way in which two female cats, previously enemies, will sometimes share the nursing of the family of one of them, if the other has lost her kittens.

MISTAKEN FOR A HAWK.

In the case of the young cuckoo, however, the devotion of his foster-parents and the occasional kindness of other birds, appears the more remarkable from his resemblance to a hawk, which sometimes causes the surrounding small birds to mob him, instead of feeding him. They quickly desist, however, on discovering their mistake, which seems usually to have arisen from his clumsy manner of alighting upon a hedge. A bird with long wings and tail naturally finds this difficult, because before his feet have grasped one twig, his wings and tail strike several. Even turtle-doves and wood-pigeons make

a great fluttering at such times, while on the rare occasions when a hawk enters a bush he seems to fling himself into it, with the same action that he would use in trying to grab an evasive hedge-bird. The young cuckoo similarly seems to tumble in or out of a hedge, and this action appears momentarily to prompt small birds to mob him, though they soon withdraw, as though close inspection of his plumage satisfied them of their error.

BIRDS ALREADY ON THE MOVE.

While the young cuckoos are still with us, there are abundant signs that the birds are already on the move—spreading abroad, as it were, to make room for the surplus population after the breeding season. As yet no definite southward movement has begun ; but some early rooks, flying south, have reached the north Norfolk coast ; hawks have reappeared in places to which they had been strangers since early spring ; and the voice of the green woodpecker has been heard again in fields where he is only known as a traveller in spring and autumn. The chittering note of the robin, which seems as suggestive of foggy November as its clear carol is of Christmas, may already be heard in the garden as dusk draws on. The unseasonable chill of the evenings lends emphasis to these premature warnings of coming change ; but our gardens were never more full of thronging summer life than now, with families of young birds, personally conducted by their parents, learning the art of life in flower-bed, fruit-garden, and orchard.

FAMILIES IN THE GARDEN.

Prettier than any are still the family parties of goldfinches, fluttering like bright butterflies, splashed with yellow and tipped with crimson, among the deep-blue cornflowers, though when you chance upon a family of swallows, cosily twittering side by side, with ruddy throats and glossy steel-blue backs, as they nestle together upon the hanging branch of a mossy apple tree, you are inclined to bracket them equal first as jewels among British birds. And then you turn and find that all the blue tits, which were lately spider-hunting among the larches, have descended to the wild garden, where they cling in mixed acrobatic attitudes to the opium poppy stems, and hammer away at the pods. When a blue tit passes from one ripening poppy pod to another—perhaps at the other end of the flower-bed—his transit suggests less the flight of a bird than that he had been suddenly “flipped” from one and stuck to the other. But of the pretty ways of birds there is no end.

THE WHITE POPLAR AND ITS CLIENTS.

August 16.—The abele, or white poplar, is one of the loveliest of our trees. It almost rivals the silver birch in the silky whiteness of patches of its stem, contrasting so cleanly with the dark and rugged wrinkles round them; and the same tendency to whiteness comes out in the snowy undersides of the leaves, making the whole tree seem to break into foam with every breeze that touches it. But, unfortunately, the abele

is just as good to eat, from the insects' point of view, as it is beautiful from ours, and the saplings always have a hard struggle for existence. The entomologist knows this well, and never passes a young white poplar without scanning its branches for the many curious caterpillars which are seldom to be found on other trees if there is an abele near at hand. It is one of the most striking phases of instinct that a mother moth, who never eats leaves, and has probably no recollection whatever of having eaten them as a caterpillar, should exhibit all the knowledge of a botanist in choosing, out of a whole wood, to lay her eggs upon the exact variety of poplar which her caterpillar children will like best. She will never see them. Probably she has no notion that anything will ever come out of her eggs. So far as one can tell, she never intentionally looks at the eggs after she has laid them; and if she happens to be a prisoner in a confined space she will lay one egg upon the top of another without compunction, sometimes glueing a score or more into a lump, from which one would think that the baby caterpillars in the middle must have a lot of worry in emerging.

CATERPILLAR PESTS.

But the interesting instinct of the mother moth in selecting exactly the right kind of tree for the caterpillar children that she will never see, becomes a decided nuisance when you also have selected exactly that kind of tree for ornamental purposes. Thus, in a "good year" for insects, your young abeles are often reduced to very rags and tatters. Among

the advantages which we derive, however, from our variable climate is comparative immunity from "plagues" of caterpillars, though the sequence of mild winters and fine summers that we have enjoyed of late brought us very near to several. Curiously enough, too, the very caterpillars which possess the power of becoming upon occasion a devastating pest are usually those which seem most helpless and conspicuous, and are the offspring of sluggish and easily detected moths. The reason is, of course, that they are "protected," either by stinging hairs or acrid taste, from most insect-eating creatures, and so, when their real enemy, the weather, spares them for several successive seasons, there is no check upon their multiplication. As, moreover, they reproduce their kind a hundredfold in each generation, the fourth mild year may see a million caterpillars descended from each female moth.

THE BROWN-TAIL PLAGUE.

Once, towards the end of the eighteenth century, the brown-tail moth scourged Europe, including the British Isles. Ordinarily the brown-tail moth—a good-sized, snow-white moth, with a dense paint-brush tail of rich brown hairs—is by no means abundant; but it is very easily discovered, and seems always too sleepy, when caught, to do anything but lie on its back with its legs in the air. Even when provoked to fly, it moves so slowly and steadily that you can easily knock it down again. Its caterpillars, too, are conspicuously handsome creatures, of black, red, and white, with tufted hairs, and they sit by

preference on the outer leaves of their food plant, so that you can see them yards off. Yet it was for rescue from this easily discovered and easily destroyed insect that, in 1792, prayers were publicly offered up in the churches of London; and in one day the churchwardens, overseers, and beadle of Clapham officially witnessed the burning of fourscore bushels of the caterpillars and their webs, which the poor had been employed to collect at the rate of one shilling a bushel.

THE SATIN MOTH.

At many of our southern seaside places might be seen, in 1902, how our English climate ordinarily nips the chances of such plagues in the bud. Some of the roads are usually planted with avenues of young abeles and other trees, upon which the satin moths—near relatives of the brown-tails, but lacking the brown tuft at the tail, and having a semi-transparent sheen upon their white wings, which suggests their name—had prospered exceedingly during the last few seasons. This year, however, an opportune storm of wind, with a deluge of rain, washed the moths off the trees, and you could see them drowning by scores in the gutters. Still, vast numbers survived, and on most of the poplar trunks you could observe the white wafer-like patches of their eggs. Unlike its relatives, the brown-tail and gold-tail moths, which cover their eggs with the long hairs plucked from their own tails—indeed, when a female has finished laying she has no tail left—the satin moth covers hers with a secretion which dries into a white papery stuff. As the

hairs of the others painfully irritate the gullet of any small bird which foolishly eats the eggs, so, no doubt, the secretion of the satin moth furnishes its eggs with protection against the hungry. Otherwise, every wandering tomtit would eat them, because you cannot help seeing the white spots on the tree-trunks as you pass. Indeed, this is one of the cases where a little entomological knowledge would be useful to local "authorities," for a boy sent round to scrape off and destroy the egg-patches could in a day annihilate many tens of thousands of embryo caterpillars, which would otherwise devour half of the leaves upon the trees.

THE HARVEST'S UPHEAVAL.

August 23.—A terrible revolution has been taking place in the country-side. For many birds and small beasts the whole theory of the universe and the nature of existence have been upset. Until a couple of weeks ago the landscape was covered with wide sweeps of standing crops, beneath whose pillared shade partridges and field-mice, leverets and land-rails, rabbits, rats, and hedgehogs wandered in security, as wild men might dwell in the shades of endless forest. Each row of wheat made a whispering aisle of grateful shade and shelter, narrowing to infinite perspective to either end, and crossed at every few inches by right-angled alleys, which lost themselves at once in other glades that stretched far as eye could reach. Some of the older creatures, perhaps, could remember the time when the world had been different. Perhaps they could even

recollect those days of midwinter terror, when the partridge "drives" took place over those bare uplands, and when the remorseless advance of the beaters drove all wild life with wings whirling from its last scant cover among the turnips over the line of hedges where the ranged sportsmen were hidden, and where an inferno of explosions greeted each scattering covey. Some of the hares might recollect this, too; for, unlike rat or rabbit, mouse, hedgehog, or weasel, the hare has no hole of refuge, but must run, as the partridges fly, straight into the terror of death.

THE SHELTER OF THE CROPS.

But those who could recall these terrible times were few. The vast majority of the tenants of the quiet corn-glades were young creatures of the year, who had grown with the growing corn and knew no other kind of world than this shady store-house of food, where sounds of the outer universe seldom reached them, save in the muffled echo of a trotting horse's feet, or the toot-toot of a motor-car upon the distant high-road, or the faint chorus of bleating sheep folded upon the hay-crop beyond. But from green the cloistered aisles of cornstalks had yellowed to the harvest, and one day the creaking gates were thrown open, and men thrust their way between the hedges and the crop, where for many weeks only the solitary gamekeeper's foot had passed, and presently the strange swish-swish of scythes sent the wondering small folk of the field stealthily creeping by devious routes among the corn away from the ill-omened sound.

A DAY OF TERROR.

Then, when the scythemen had cleared a passage where the strong farm-horses, two abreast, could draw the cutters, a louder terror arose. Rattling of steel teeth that cut the cornstalks by hundreds, and the swirling rustle of great sheaves that fell before the revolving blades and were neatly laid aside in ordered rows, mixed with the tramp of horses and the shouts of men, passed round and round the field—now dying away in the distance on the left and presently swelling loud again from the right. And soon the wondering small things found, as they drew further and further towards the middle of the field, that the intervals of silence grew shorter, and then that there were no intervals at all, but the rattling of the cutters, the rustle of the falling corn, and the voices of the men were audible through the whole of their narrowing circuit.

DASHES FOR LIFE.

And by this time many of the retreating small things had passed beyond the range of their familiar corn-glades and found themselves in the company of others whom they had never met before, creeping, like them, away from the encircling terror towards the centre of the field. Then panic began. Some running this way and some that alarmed each other the more, and in sudden horror, when the rushing sound of the cutters suddenly seemed to approach from an unexpected direction, now one and now another would break cover, sometimes in the wrong

direction, as when the shouts of men stopped the cutter for a moment and a dying leveret was dragged out from the tangled sheaf, or when two young corn-crakes were picked up mangled in the track of those toothed blades.

THE REFUGE DESTROYED.

And so to the end. The fluttering small birds that have flown on and on before the cutters, in and out of the lessening patch of standing corn, are forced to whirl in flight to the now distant hedges. A covey of young partridges that can scarcely fly are seen still rising now and then to the level of the ears in the last small strip of standing corn. A shout, and the cutters stand again while the little partridges flutter out under the very blades of the machine and between the horses' feet. Here, too, the last rabbit makes his rush; but, unlike the leverets, which have been allowed to pass, his bewildered flight among the rows of piles of corn is soon cut short by a well-aimed missile from the hue and cry of labourers who saw him bolt; for rabbit-pie is a common harvest dish. Here, too, the last rat dies, squealing under a hobnailed boot; and here, in the very last yard of corn, a family party of little whinchats, that have only just left the nest, make a fluttering dash for life. One the cutter kills, but the rest escape, scrambling over the stubble. A terrible journey has been theirs on the first morning that they left their quiet nest in the far furze clump beyond the corner of the field; and for all the hundreds of small folk that knew no other home but that aisled expanse of standing corn, a

bare bewildering wilderness of stubble, striped with rows of piles of sheaves, remains. They may take refuge in other fields, but the inexorable harvest proceeds, until at last the revolution is complete, and over his clean, wide acres the sportsman can count his coveys in the open, and calculate the—rather meagre this year—prospects of the shooting season.

NOTING THE BIRDS.

August 28.—The changing winds of the fourth week in August made the migration of birds most interesting to watch on the North Norfolk coast. No other place is so good for the purpose at this season, because the general movement of the birds is to the south and west, and the sea here, stretching to north and east, makes a clear dividing line, on crossing which the birds can be noted and—like cabmen at a London terminus—have their numbers taken. But it is before the regular oversea migration has set in that one learns most about the travelling of birds, just as the police at the railway station, who grow bewildered with the traffic of the excursion season, are able during quieter times to take notes of the travellers and make shrewd guesses as to their haunts and business.

OVERSEA VISITORS.

Later, when the bitter insistence of the north wind will brook no reluctance of the birds to cross the sea, they will come streaming into Norfolk from Lincolnshire, as well as from Norway and Denmark,

according to the direction of the wind. Sometimes, even, as last year, strong north-westerly winds will bring birds that usually travel down the west coast of Scotland and Ireland to our east coast instead, and Bewick's swans may be seen striking inland for the Fen Country, of which they have caught a welcome glimpse on their lofty coastwise flight. But our proper wild swan on the east coast is the whooper, and when you see these majestic birds trailing their meteor-like flight over the level of the salt marshes you may know that hard weather is behind them. Leaving in desperation their ice-gripped haunts, they have outflown the bitter wind; but it is coming after them, you may be sure.

WANDERING WITH THE WIND.

This will not be yet, however—perhaps not at all in the coming winter—and meanwhile the summer birds are wandering southwards by easy and erratic stages, going in whatever direction the wind chances to blow, but feeling no compulsion as yet to cross the sea. Inland one can hardly observe this movement, because the same wind which carries some birds away brings others of the same kinds into their places from elsewhere; but on the North Norfolk coast, to which the sea still presents too formidable a barrier on north and east, you cannot help observing how, when the wind blows from south and west, your garden becomes thronged again with whitethroats and willow warblers, chiff-chaffs and flycatchers, which are stopped by the sea; nor how, when the wind shifts to north and east, all these little

soft-billed wanderers vanish and the gardens are empty of them, because the sea prevents the arrival of others to take their places.

A CROSS-MIGRATION.

The numbers of martins and swallows on barn-roof or telegraph-wire similarly wax and wane with the changing winds, but larger birds are less afraid of the narrow sea which separates Lincolnshire from Norfolk, and on the 22nd the autumnal influx of peewits, curlew, golden plover, rooks, and missel-thrushes began in earnest. What made the arrival of the first peewits on that day seem strange was that, while they came from the north, small birds were still assembling from the south. A glance at the weathercock and then at the sky explained this seeming contradiction, for while the arrow pointed south-west, the high clouds were drifting slowly from the north-west. Thus on different planes both the large birds and the small were travelling to us with the wind, although in opposite directions.

ARRIVAL OF THE PEEWITS.

On the next day the wind was set in the "nor'-nor'-west," and many flocks of peewits arrived, with more scattered companies of rooks, while irregular detachments of missel-thrushes trailed inland, having evidently "cut the corner" of the Wash. It was very interesting to watch the arrival of the peewits. One could see them approaching from the distance like a cloud which spread wide to right and left as

it drew near. There was little of the peewit's characteristic buoyancy in their flight. With slow-flapping wings, straight and business-like, they shaped their thronged course for the large green squares upon the chess-board landscape, which showed where turnip-fields lay among the harvest's golden chequers. Catching sight of the watcher below, half of the host would wheel to one side and half to the other—for the way-worn peewit knows what it is to be welcomed with a shot-gun; but when the birds of one section caught a glad glimpse of others of their kind seated peacefully in the adjoining turnip-field, how quickly they swooped earthwards, and at the same moment the other section, seeing the movement, glided side-long across the sky to join them, and poured their flying ranks, like a shower of rain descending in sweeping curves, into the green shelter of the spreading turnip-leaves. For a minute the field was full of plaintive conversation as the new-comers settled themselves to rest. Then silence fell on them all, sitting, as they had flown, in ordered ranks down the rows of turnips, until another flock arriving caught sight of the company, and descended also in gracefulest curves to join them.

THE ROOK AND THE CORN.

Next day they had scattered themselves over the country-side, and the rooks which had come with them began to make their presence known in harvest fields where they had not been seen for many weeks; for it seems characteristic of the wily rook that he should leave us when the crops have grown too high

for him, and return as soon as the cut corn lies on the ground, easy to steal. "Farmer's friend" the rook may be in season, but he always knows how to get food, if there is any to be had. With his return, however, and that of the peewits, two of the most familiar birds of our winter landscapes have come back. There are many more to follow of the same and other kinds before we need think about winter.

SEPTEMBER.

A LATE AND EARLY SEASON.

September 4.—Nature's seasons of 1902 were both earlier and later than usual—earlier because the chilly summer caused many birds to leave off breeding, and thus set them free to travel before their time; and later because the lack of sunshine retarded all growth. From these combined causes we were threatened with the actual disappearance of all our summer birds before the crops had been cut; but the closing week of August brought a change. The wind, which had hovered so persistently about the north and east, set steadily in the south and west, and, though this brought deplorably wet weather for the farmers, it set the unsteady tide of bird migration flowing back again, insomuch that, by the beginning of September, some of the eastern districts had more summer birds than in any previous month. Some, however, had gone beyond recall. The cuckoo, who left us at the beginning of July, and the butcher-birds, that followed early in August, had travelled too far for any winds to bring them back. The swifts are early migrants too, and they cover such immense distances in a day, feeding as they fly over league upon league of landscape, that counties must seem to them scarcely larger than parishes to the little warblers, and kingdoms than counties.

HALTING TRAVELLERS.

So while the swift, trailing its lightning broad-arrow streak across the sky, may, with a favouring wind, breakfast in England, dine in France, and at sunset sight the Pyrenees, the little round-winged chiff-chaff, searching for food from covert to covert, or hedge to hedge, may find the way long indeed from Norfolk to Essex. For the swift usually makes a clean job, so to speak, of his migration, finishing it with promptitude and despatch, while the chiff-chaff potters along day after day—though he, too, can cover great distances with the north wind behind him—and sometimes, when weeks, perhaps, of wandering have brought him to far Cornwall or Devonshire, he elects to stay there for the winter, rather than risk the passage of the widening sea. Blackcaps have, too, it is said, been tempted to remain in secluded English orchards where heaps of apples were left rotting on the ground; and now and then the whinchat will prefer to take his chance of an English winter, like his cousin the stonechat. For the same reason, no doubt, that weak-winged wanderer, the corncrake or landrail, often chooses to winter in the south of Ireland rather than cross the sea.

A CONTRAST IN SPEED.

One is tempted, however, to exaggerate the differences of birds' flight. Watching the occasional swift who remains into September, wheeling on a higher plane than the circling crowd of house-martins, one sees how easily these arrowy, tireless wings

can cross tracts of ocean, when the chill of coming winter drives insect life from the upper air to earth. Then, looking at the little willow-wren, fluttering among the branches of a larch, carefully examining one twig before it flits to the next, one is inclined to wonder how so trivial a thing crosses seas and continents twice a year. But the wind is a constant factor, and a very great factor, in the journey of both. Thus, if the wind blows from the north only at the rate of fifty miles an hour, the swift, flying sixty miles an hour, will only have achieved a hundred and ten miles, while the willow-wren, with thirty miles an hour, would have flown eighty; and, of course, the stronger the wind the less would be the proportionate difference. A balloon cannot fly at all; yet if we could steer a balloon and alight with certainty and safety whenever we wished, who would think anything of travelling to Africa by balloon? We should only have to ascend when the north wind blew, and rest when contrary winds prevailed; and this is what the little warbler is able to do, because the contrary winds—that is, the warm south winds—bring out plenty of insects for him to feed upon.

A PUGNACIOUS ATOM.

And in giving the willow-wren only thirty miles an hour, we may do him an injustice, for you may often see him exhibiting a pretty turn of speed. He has a big heart in his little body, and his delicacy of outline covers a remarkably pugnacious character. For no reason whatever, apparently, he will chase any passing bird, and, small as he is, there are few

that can escape the vindictive tweak of his tiny bill. Very indignant are the sparrows when the little imp pursues them to their very water-pipes, and tweaks them as they alight ; but they seem to know that it is no use to pursue such a fiberty-gibbet among the bushes, because you never see them attempting to retaliate. Yet the sparrow can fly too, for, when it chooses to harass a pigeon, you may see the larger bird whirling round the house at what looks like its best speed, with the sparrow never more than a foot or two behind the end of its tail. Yet a pigeon will, in turn, outfly a hawk. The fact is that we are apt to mistake style for power of flight, and to think that because the swallow wheels gracefully in the air, or the falcon swoops like a thunderbolt upon its quarry, they must possess immense speed, whereas in the matter of covering distance—at any rate a short distance—birds with stout bodies and moderate-sized wings may be swifter than either. The little auk has wings which, in comparison with its body, seem scarcely more than flippers, yet it skims over the sea like a bullet.

THE WINDS AND THE BIRDS.

September 11.—Shifting winds, during the first ten days of September, delayed bird migration ; though flocks of rooks, cawing high across the sky, seemed to take advantage of each wind from the north to travel south, and at the same time the flycatchers seized the opportunity to depart from their breeding-haunts. The flycatcher, however, travels, like the cuckoo, by easy stages, and continues to

reappear in early autumn at intervals in districts which he seemed to have already forsaken. These seeming reappearances are, no doubt, the arrivals of fresh contingents from further north, travelling southwards while a cold wind drives the flies to shelter, and halting to feed and enjoy life when the genial south wind tempts insect life abroad again.

THE SWALLOW'S ADVANTAGE.

The swallows and martins are less ready to take a hint from the north wind. In tireless flight they winnow daily such large spaces of the air that even when the wind is chill in early September it blows enough small insect life to leeward of tree and hedgerow to support them. Besides, many of them, especially the house-martins, who arrived late, have young still in the nests; and because these are obliged to stay the others halt with them as long as possible. Presently there will come an unmistakable cold nip into the air, which even the martins and swallows must obey; but, since they can always outdistance the wind in a few hours' flight, they gain rather than lose by staying till the last moment. The youngest of them grow strong on the wing by daily practice; and if they departed with the cuckoos and butcher-birds, or even with the earliest warblers and fly-catchers, they would have to abandon their habit of rearing late broods, and thus diminish their rate of multiplication.

LARGE FAMILIES MEAN SHORT LIVES.

There is, however, a sad side to this advantage of rearing several broods, for in spite of it the swallows and martins no more than hold their own among other species in the struggle for existence, and it is therefore evident that more of them die between autumn and spring than of other birds which rear fewer young in summer. Indeed, in the case of all living things in a state of nature, you may be sure that their rate of mortality corresponds to the number of young which they produce. Thus a guillemot, which lays only one egg, must live at least ten times as long, on the average, as a wild duck, which lays a whole nestful; while the risks of the swallow, with two or three broods, must be several times as great as those of the butcher-bird, with only one.

WHY SOME BIRDS ARE RARE.

That it is a disadvantage, however, in the long run for birds to rear only one child in a season is plain, from the fact that this is the class of bird which tends to become extinct whenever man or any other enemy reaches its breeding-haunts. Living and breeding on almost inaccessible precipices, the guillemot is still abundant in places; but all over the world the common birds are those which rear several broods of four or five each in a season, showing that, other things being equal, this is the best system; though we have still to learn why some creatures are very common, while others, differing hardly at all in structure and habit, are very rare.

Too often, however, it is the fatal gift of beauty which causes a wild creature to become rare wherever man can reach it.

GOLDEN ORIOLES IN CORNWALL.

In this connection it was a welcome note which a friend sent to me from Cornwall of a pair of golden orioles that have bred there for two seasons in a sheltered valley where the "man with a gun" is luckily almost unknown. Although this fine bird, as large as a thrush, of brilliant yellow and black, comes annually to Britain, it is extremely rare, and, having learnt to be very shy, appears rarer still. Like the hawfinch, also a bird of distinguished appearance, the golden oriole may live all the summer and rear a family in a garden without the owner, unless he happens to be observant of wild life, knowing that he has been so honoured. In the case of the hawfinch the honour is becoming doubtful, perhaps; for, though formerly rare, this handsome bird grows commoner every year, and he is the very mischief among the green peas. When you see a whole row of peas with little more than empty pods dangling in the wind, you may know that the hawfinch has paid them an early-morning visit. The golden oriole has a similar weakness for cherries in season; but he is so very rare and so handsome that one would gladly let him eat his fill on the chance of tempting him back to breed next year.

A WELCOME RESIDENT.

It is in this respect that the news from Cornwall of the oriole breeding there for *two* successive years is so welcome; because the last sixty years have produced scarcely half a dozen records of orioles' nests, and in almost every case, of course, the eggs have been taken. The present Cornish record appears, therefore, unique; for although the nests have not been discovered the birds have been watched by a keen observer of wild life, and he is certain that they have bred. The record is interesting in another way, too, because Kent, Norfolk, Essex, and Northamptonshire are the counties where golden orioles' nests have previously been discovered, and it is not impossible that the bird, which has the habits of a thrush, might become a resident in the far southwest of the country, where the little chiff-chaff, a migrant elsewhere, often prefers braving the mild winters of Cornwall or Devon to risking the passage of the wide Channel. The first glimpse, by the way, which you catch of a golden oriole is usually as a streak of yellow passing swiftly between the recesses of a shrubbery; though in spring his call-note, a whistled "Who are you?" is generally the announcement of his presence.

THE GULL'S DISAPPOINTMENT.

September 18.—The gulls which come in hosts to our fields near the sea for the winter have had a hard time with the lateness of the harvest on the east coast. It has been as bad as a prolonged frost to

them. For the gull ashore is naturally out of his element, and almost incapable of making a living without assistance. The rooks which share with the gulls the worms that the plough turns up can do well enough, when the plough is idle at harvest-time, with the scattered corn in the stubbles; and they have a certain skill, too, in discovering worms and grubs, and catching daddy-long-legs in the pastures. But the gull has no resources of this kind. His ancestors have always been seafaring folk, and he has inherited no landsman tricks. So, when he comes ashore to stay for the winter months, he finds himself among a land-bird population, all of whom have special talents, which he has not, for extracting food from the hard earth; and he is badly off when, for reasons which he cannot understand, man, instead of turning up the brown earth full of worms for him, as usual in September, seems to be playing the fool all over the fields with heaps of scattered corn.

CLEVER LAND BIRDS.

The gull has one shift, indeed—the traditional resource of seafaring folk who have become desperate. He turns pirate and robs the peewits. That these birds and the starlings—whom the gull occasionally plunders also in very hungry times—are exceptionally clever at finding food, is evident from their habit of feeding in large companies all the winter, without resorting, like the rooks and jackdaws, that sometimes feed with them, to theft from corn-stacks and turnip-fields. Their methods are different, however. The starling goes probing about, wherever he can find

ground soft enough to stick his sharp bill into, and often you may find a nice soft bit of turf as full of holes as a piece of lacework, after a flock of starlings have visited it. The peewit, on the other hand, listens intently for the worm moving in the earth ; if he hears nothing he runs a few steps and listens again. Some writers assert that he deliberately pats the ground with his feet to frighten the worm into the idea that the mole is coming, and so drives it to the surface. If any peewit does this, however, he must be a very talented individual, for you may watch hundreds of ordinary peewits time after time for years, and never see the manoeuvre once. Nor will you see them tap the ground for the same purpose with their bills, as other writers declare, although in spring they will challenge rivals to combat, or inform a human observer that his presence is detected, by a series of polite and graceful bows, when the bill seems actually to tap the ground.

LISTENING FOR WORMS.

It is quite possible, however, that the natural pattering of the peewit's feet, in those dainty little runs which he takes, serves the purpose of making the worms move ; and the abrupt halt in a listening attitude at the end of each run suggests that this must be so, because it is characteristic also of thrushes, blackbirds, and robins, which similarly hunt for worms. If the sudden stop after a quick run was not an essential part of this method of getting worms, it would not have been acquired by so many widely different kinds of birds ; and it closely resembles, too, the

tactics of a dog, or any other hunting animal, which makes a dash forward, and then stops suddenly to see or hear what quarry has been disturbed. The birds, however, must trust to their ears alone, because the worms which they discover are evidently out of sight, since they have to dig them out. Besides, they use the same tactics in discovering cockchafer-grubs, which never come to the surface at all, until the bird drags them out.

THE GULL'S VICTIM.

And the plovers manage well enough with their ears alone; for wherever you see—as you may see every day in autumn on the east coast when the ploughs are idle—a number of plovers and gulls on the ground together, you may be sure that the plovers are finding dinners for themselves and the gulls too. There is no charity in the matter, however. The stress of the struggle for existence forbids wild creatures to exhibit this virtue towards each other; and on the gull's part it is sheer blackmail and piracy which leads him to seek the plover's company. Peep through the hedge and watch them. There are ten times as many peewits as gulls; and while the former are constantly moving a yard or two in different directions, each gull sits upright and motionless, watching the plovers immediately around.

THE PIRATE'S SUCCESS.

Suddenly, with a menacing scream, the gull takes wing. He has seen a plover stoop quickly to extract a worm, and just as it is pulled out of the ground he

is almost upon the captor. In a flash the peewit is up and away ; but the gull can fly too, and is barely a yard behind. If it was a matter of catching the peewit, the gull might find his labour vain ; for no bird that flies appears master of quicker turns and dodges than the peewit. But he cannot eat the worm while he is ducking and twisting just a yard or so in front of the gull, and the latter has no idea of relinquishing the chase. So the peewit very soon drops the worm, less, perhaps, as an act of surrender than for the purpose of lightening ship ; but the result is the same. The gull drops to earth after the worm, and promptly eats it. Then he resumes his statuesque attitude of observation of the peewits round him.

SUMMER IN SEPTEMBER.

September 25.—Pleasures seem best when we are about to lose them ; and every smoker will tell you that the “last pipe” at bedtime has a fragrance all its own. So the very last smiles of summer in September seem sweeter than all that have gone before ; and when summer has been chary of her smiles, we value her passing graciousness all the more. We had cold winds when the roar of bees in the sweet-scented limes should have made music in lazy ears ; and now the roar of many insects that rise as you pass the sunny clumps of Michaelmas daisies sounds as though summer wished at the last to make amends for her earlier coyness. Only a few of the insects are honey-bees, but the rest are worth watching — bluebottles, greenbottles, blackbottles, and

tawny-banded hoverers, making believe to be wasps for their own protection—as they scramble with almost hysterical haste over the wide-spread blossoms, or remain still as winged gems, while they suck deep from the little honeyed tubes in the middle of a chosen flower-head. For in all the daisy tribe the insignificant little florets in the middle of each flower are the important ones; the outer-spreading rays of colour that catch the eye are advertisements and signboards.

THE BLUNDERING WASP.

But here comes a visitor with manners very different from the hungry crowd to whose needs the Michaelmas daisy caters for her own profit. At first sight you might think that the wasp was drunk or mad, for it bumps violently against one blossom after another, banging about all over the clump, and scattering the flies in all directions. But there is method in its madness. It is out on a hunting expedition; for the greedy grubs at home have reached the age when they require animal food, and lots of it. Flies especially suit their appetites, and the wasp knows that Michaelmas daisy blossoms are favourite haunts of flies. But the flies know something too, and when they see a wasp approaching they do not remain. So the wasp, whose sight is not very good—you may often see one flying bang against a white-washed wall because it did not see that there was anything there—has to take the flies by surprise, and it goes blundering about among the flowers, darting first against one and then another, in the hope of

tumbling upon a fly in the middle of its dinner. But the flies are so nimble that, although there may seem to be two or three of them on every blossom, you may watch a wasp knocking its head against a score of flowers without once finding a fly at home. Yet the manner of the flies' escape at the same instant that the headlong wasp arrives is too quick for human eyesight.

A CATERPILLAR'S WILES.

This swift conflict of wits and agility between eater and eaten, with the odds on the escape of the latter, runs through all nature. The hawk hunts far and wide, and stoops many times before she strikes her quarry ; and the heron sees and is seen by scores of fish ere he plunges with success at one. But the wasp belongs to a very high class of hunters, for it has the instinctive intelligence to adapt its methods to the prey pursued. When, for instance, he searches for small caterpillars, there is no promiscuous bluster in his tactics. Caterpillars do not sit on every leaf, like flies on every blossom ; and wasp grubs would die hungry if their providers went about banging their heads against all the leaves in a hedge. So now the wasp hovers cunningly up and down one twig after another, looking, or more probably smelling with its "antennæ," or feelers, for its prey. When it finds a curled-up leaf, it quickly ascertains, by hurrying quickly from the front door to the back, whether the fat little caterpillar is at home ; and, if so, it deliberately sets to work to cut, or, rather, bite, its way in. But the caterpillar is prepared for this, and

when the enemy's face appears at one door, it escapes by the other, and tumbles straight to the ground, paying out a silken rope as it falls, to climb up again by when danger is past.

VERY LIKE HUMAN REASON.

But the wasp, in its turn, is prepared for this, and no action performed by any wild creature approaches more nearly to the result of human reason than the conduct of a wasp when it discovers that a caterpillar has thus escaped. For it immediately descends in a perpendicular line towards the ground, examining each twig and leaf on its way, and if it fails to find the caterpillar there or on the ground, it will often ascend and descend several times, between the curled leaf and the ground, before giving up the search. It is just as if a man said to himself that the caterpillar could only have fallen in a straight line, and must, therefore, be either on the ground immediately below, or on some intervening twig. He would in that case refuse to give up the search after one failure, hunting up and down the perpendicular line of descent several times, just as the wasp does. What happens is, of course, that the falling caterpillar glances from a leaf or blade of grass into the mass of herbage, and there lies snugly hidden till the coast is clear, and though human reason would quickly learn to trace the runaway by his silken rope, that is just where the limitation of the wasp's intelligence enables the caterpillar to survive.

BUTTERFLIES OF AUTUMN.

But wasps belong to the discomforts rather than the pleasures of "summer" in September. That they eat flies would be more to their credit if they left the peaches and grapes alone; and they get so abominably drowsy on chilly mornings that when you discover one inside your garden-gloves you are liable to be reminded with a sharp pang that winter is near. So let the wasp go blundering and pouncing to other clumps of flowers, while you stay and watch the peacock-butterfly spreading the eyed damask of his wings to the welcome sun, and the red admiral shifting the angle of his outspread pinions of velvet-black, splashed with white, and barred with scarlet, as though desiring admiration from all sides. Handsomest of the butterflies of the year are these glories of the garden in September, though they will soon be hidden away in cracks and crannies with the few wasps that survive October's holocaust. Perhaps in January we may see our peacocks and red admirals again as evidence of the "abnormal mildness of the season," but they fare ill when thus untimely tempted out by the winter sun. So do the queen wasps; but one has little sympathy with wasps at any time, and least of all when each is prospective mother of a host.

OCTOBER.

WELCOME WITH A SHOT-GUN.

October 2.—By October the birds' tourist season for the autumn is in full swing, and the shore gunners on our eastern coasts anxiously scan the direction of the wind each day. Just as the British tripper to the Continent in his summer holiday season finds that hotel-keepers and waiters have been studying steamship and railway charts in order to be ready to receive him with bland smiles and attractive tariffs, so the foreign bird, migrating in autumn, finds that English gunners have been studying the winds—his only means of distant travel—and are waiting all along the shore line to welcome him with breech-loader and punt-gun. If the old-fashioned idea that flocks of migrating birds were "personally conducted," like Cook's tourists, by experienced individuals who have made the journey before, were correct, one could imagine the cicerone of a party of migrants, winging their way high over the surging foam, piping to his inexperienced followers, "There is England—that ragged, dark line on the horizon: now shut your eyes, and fly for all you are worth!" Bang! Bang! Bang! "Well, how many of us got through this time?"

SPARING THE SMALL BIRDS.

This week the bang-banging is continuous; and it is a safe assertion that if firearms had come into fashion soon after the glacial epoch, or whenever else birds first learned to migrate, England would now be a birdless land. But we are not so bad as some of our neighbours. In spite of the nursery rhyme, blackbird pie is not now commonly regarded as a dainty dish to set before a king or any one else. We do not kill one per thousand of the foreign skylarks which come over every autumn to eat our clover to the ground; nor does any one, for larder purposes, think of emptying a double charge of sparrow-hail into a flock of linnets or the congregated swallow-birds that cluster, thicker than flies, upon a barn-roof in September. So we are able to rejoice in a wealth of British small bird-life which is denied to certain greedy foreigners; and, though we would like avocets and spoonbills, bitterns and great bustards, to be common again in England wherever local circumstances might suit them, still it is something to know what multitudes of many kinds of birds are permitted to arrive among us unscathed, and to enjoy for a season such hospitality as our treacherous climate affords.

A DIARY OF MIGRANTS.

Taking the middle of the North Norfolk coast as a point of observation, and disregarding sea and shore birds, a diary for the last week in September, 1902, would be somewhat as follows: On September

24, when the wind, which had been in the south for some days, changed to the north-west, many rooks passed, flying high overhead. These were evidently British birds coming southward for the winter. On September 25, when the wind had shifted to the north-east, there was a manifest increase in the number of swallows at sunset. These were probably foreign birds from northern Europe. On September 26, with the wind still in the north-east, many jackdaws and rooks arrived. These too were probably foreigners; but the numbers of missel-thrushes, song-thrushes, and blackbirds which appeared on the 27th, when the wind had gone back to the north-west, were no doubt British birds. On the same date many British wood-pigeons seemed to have arrived. On the 28th, with the wind in the nor'-nor'-east, a large number of swallows and martins left us for the south-west.

FOREIGNERS ARRIVE.

September 29, with a strong north-east wind, was a notable day for migration. Of summer birds, passing on their way south, the wind brought many foreign swallows, martins, and flycatchers—the last-named only halting for part of the day. Luckily, though the wind was strong the sun was warm, and the flycatchers had no trouble in finding insect food in sheltered corners. On the same morning great numbers of greenfinches and chaffinches arrived, as well as skylarks, one large flight of the last being sighted as it came from oversea like a cloud, and spread itself broadcast over the coastwise stubbles.

That all of these birds were foreigners was proved, not only by the direction of the wind, but by the simultaneous arrival with them of many bramblings and hooded crows. The last are well known as "Denshmen," or "Danish crows," on the Norfolk coast; and the brambling, a handsome chaffinch-like bird, distinguished by its ruddy shoulders and the white band above its tail in flight, comes from Norway, only one instance of its breeding in Britain having been authenticated.

THE LINGERING MARTINS.

Nor were these the most distinguished visitors that the week of north winds brought, for on September 30 a peregrine falcon was wheeling wide and free over the coast fields, where lark, partridge, and plover crouched still as death. On October 1, with an east wind, all the swallow-birds departed, with the exception of a few house-martins, which still had young in their nests. Thus with the advent of flock upon flock of foreign birds, we awaited only the passage of these few lingerers to sever our last link with the summer that was past. For the house-martins that remained it was an anxious time. They arrived much later than the swallows in spring, and an unkind caprice of the weather, such as ushers in October sometimes, might cause them to suffer as the poor swallows suffered in spring.

BIRDS AND WINDS.

October 9.—The winter birds continued to arrive betimes, though the persistent east winds of the first week of October rather confused their order, bringing among their ranks from Scandinavia many summer birds which would under ordinary circumstances have continued their journey, mostly by land, across Europe. The same winds had no doubt driven British birds, migrating from the north, towards the west coast; and the far southern counties, from Gloucestershire to Cornwall, had prospects of being wonderfully well stocked with birds in the coming winter. On the south coast of Devonshire and Cornwall especially many more birds than usual would be likely to stay for the winter—unless, of course, the wind changed to the west before the bulk of them had arrived there. The weak-winged chiff-chaff and corncrake are not the only birds which shrink from crossing the widening Channel, unless a very bitter wind compels.

SUMMER BIRDS FROM NORWAY.

Last week's diary of bird migration, from a point of observation on the North Norfolk coast, brought us to the morning of October 2, when only those house-martins which had young in their nests remained. A very strong east wind, however, was blowing, and during the day many more came from oversea; and on the next morning—the strong east wind still blowing—flycatchers and redstarts were also seen to have arrived, as well as a number of

swallows. These were, of course, all summer birds travelling from Scandinavia ; but, with the exception of the swallows, which moved on again, they remained loitering near the coast for a full week. With these summer birds came flocks of yellowhammers, larks, pipits, and plovers, presumably to stay for the winter ; and a solitary but interesting visitor who accompanied them was a merlin.

MIGRANTS OFF THE LINE.

On the 4th a number of little siskins arrived, well out of the line of their ordinary migration, while more flocks of bramblings, usually scarce in the neighbourhood, and foreign chaffinches, came in on the 5th. Next day more flocks of finches arrived ; and the unusual number of robins and hedge-sparrows in the hedges by the sea seemed to show that these birds had travelled from Norway too. The robins, unlike themselves, were silent, flitting in and out of the hedges ; while the hedge-sparrows seemed to be noisily piping to each other on all sides. The reason for this contrast was, probably, that the robins, whose winter song means defiance of all other robins within hearing, were silent because they had not established themselves yet in the strange country, and there were no other robins in the coast hedges to object to the new-comers ; whereas the piping note of the hedge-sparrow is not its song, but a call by which husbands and wives, parents and children, keep within touch of each other. After a journey over sea it was natural that there should be a clamour for missing relatives. Among the robins was one young blackcap—though

the name is not appropriate either to the young or the females, both of which have caps of rusty brown. The black cap is the only summer songster which rivals the nightingale, and this one had, of course, been carried far out of its way; but it would not matter much, for this little warbler has been known to spend the whole winter in England sometimes.

SUMMER AND WINTER BIRDS TOGETHER.

Dainty wheatears, showing gleams of white in their graceful dipping flight along the coast-line, with tree pipits, which look like fine yellow-tinged meadow pipits, were also apparently fresh arrivals from Norway on the 6th, both summer birds on their southward journey; but one undoubted foreigner who had come over in numbers for the winter was the redwing. This handsome little thrush, easily distinguished by his bright yellow eyebrow and ruddy flank, had been suspected for some days among the flock of migrant thrush-birds feeding on the haws in the hedges, but he is too shy, except when starving in hard weather, to permit a near approach, so he was not identified before the 6th, though the first flocks probably came on the 2nd or 3rd. The hooded crows which arrived in the previous week seemed to have passed on, and no others had come to take their places, though every day fresh flocks of bramblings and other small birds seemed to make the passage of the sea.

QUICK CHANGES IN HOUSE-MARTINS.

Unless you chance to witness the actual arrival of a company of excited or wearied travellers, it is not easy to keep an accurate "visitors' list" of those birds which scatter themselves over the fields. While some pass on inland, others of the same kinds take their places unnoticed. Only our house-martins can be registered exactly, because at this point of observation a single group of farm-buildings happens to be the only suitable resting-place, with empty mud nests under the eaves for them to sleep in, on four miles of coast. So when, on the 6th, with the wind blowing from the north-east, many more martins thronged to the nests than had been seen since the 3rd, it was plain that they were travellers from oversea. On the next day they all departed, leaving only the two pairs which still had young in their nests. The same thing had happened on the 3rd, when the flock which had arrived on the previous day departed. On the 8th, however, the barn roof was crowded again. Thus during a week of east winds the population of house-martins had been changed three times, only two pairs which still had young remaining, as each flock of travellers came and went in turn.

HOW BIRDS TRAVEL.

October 16.—The ordinary route of our travelling birds in autumn is from nor'-nor'-east to sou'-sou'-west, because it is the cold north or north-east wind which makes them move, and the natural trend of the land in this part of Europe is to the south and

south-west. The birds do not travel until they feel the chill of coming winter in the cold breath of winds that have blown over fields of spreading ice, nor do they risk a sea-passage until they must. So they almost always "take off," for their leap across the sea, from some cape or promontory jutting out to the south or south-west, and arrive on coasts which bulge out, so to speak, to meet them. From the height at which they fly—detected only, as a rule, by the telescopes of astronomers—they can see land at an immense distance, and the momentum which they gain by a long, gliding descent enables them to make the land at marvellous speed, even across the wind. Thus, although birds always depart with the wind, they do not always appear to arrive with it.

MIGRATION TURNED BACK.

Last week persistent east winds brought over to England many hosts of birds from Norway, some, like the redwing-thrushes and bramblings, coming to spend the winter with us, and others, like the belated black-caps and the swallows, only passing on their way to Southern Europe and Africa. During this week, however, days of continuous south-westerly winds have checked migration altogether, and even to some extent turned it back. The willow-wren and the house-martin, for instance, came back to the east coast, and, in the case of the latter bird, one pair which returned to a particular spot seemed to be the very same pair, which had been the last to leave. Unlike travelling martins, which, when halting in a strange place, fly up to one after another of the

empty nests and evidently do not know on which side of any nest to look for the opening, this pair flew one after the other, with the confidence of custom, straight into the nest which had been last abandoned—the one from which the scarcely fledged family had flown on a cold, wet day, and perished miserably on the drenched ground.

THE THRUSH'S AUTUMN SONG.

Besides bringing back a few summer birds, the west winds brought softer, warmer air, and stirred the song-thrushes, even on our bleak east coast, to sing their autumn songs. Imperfect, *sotto-voce* songs they are compared with the confident carols of spring, but very welcome after the spell of silence, when robin and starling alone held up the slender threads of the year's girdle of music. Before, however, one's ear caught the first thrush's soliloquy in the hawthorn bush, the robin's cheery trill in the shrubbery and the starling's musical medley on the chimney had been reinforced by the linnets, singing glees together in the hedges, and the skylark's ringing solo up among the drifting clouds.

THE POETS JUSTIFIED.

Thus it may not be from mere convention, or for the sake of alliteration, that the poets have always linked the lark and the linnet together as the songsters of the fields. As some one has well said, in poetry, the lark always casts a linnet shadow—when one bird is mentioned in one line, you may look with

some confidence for the other in the next. Amid summer's babel of music, there might be no reason to single out the linnet's modest twitter as accompaniment for the champion song of the skies; but when October comes, and we value bird-song more because it is so rare, then those who wander afield will find the poets justified; for you may walk miles and hear no other music than the linnet's in the brambles and the lark's among the clouds.

MORE JUSTIFICATION.

At this season, too, when the brown owls are driving away their full-grown young, you may hear another justification of the poets. We all know the long-drawn "hoo-hooo" of this hooting owl, but not every one knows the insistent call-note, which sounds like "ke-wick," also uttered by it. Some writers, indeed, have poked fun at the poets for following-my-leader in such blundering fashion as always to represent a mere hoot by the words "Tu-whit, tu-whoo." Yet when the annual family disturbance of the brown owls takes place, you shall hear a whole wood and the surrounding fields resound with shouts of "Ke-wick," "Hoo-Hooo," and the poets' "Tu-whit, tu-whoo" rises instantly to the mind. There are senseless conventions enough in poetry on "nature" subjects; but that is all the more reason for giving their proper credit to the bards when they tread a beaten path which leads straight to nature.

CONFUSION OF OWLS.

They deserve the more credit because, while you may search in vain through five or six works on natural history to find out what species of owl utters the call "Ke-wick"—that is, "Tu-whit"—some naturalists distinctly, but erroneously, state that the barn-owl, not the brown owl, utters such a call-note. They also attribute to the barn-owl a hoot somewhat similar to that of the brown owl. They have, in fact, confused the two birds together, because when these inhabit neighbouring areas—the barn-owls round farm-buildings and the brown owls in some adjacent wood—the young of the latter, after being driven from the wood by their parents, are very liable to invade for a night or two the barn-owls' realm. Then you may hear the persistent hoots of the brown owls, as well as their call-note "Ke-wick," and the screeching and hissing of the barn-owls proceeding perhaps from the very clumps of trees where the latter have nested. At ordinary times, however, the two owls keep to their own localities; and, while you may hear regular hooting from the wood, round the barns you will hear screeches only. Barn-owls may also be kept in captivity for years in an aviary, where they lay eggs and incubate them, and where they are nightly visited by wild barn-owls, but never once will you hear either "Ke-wick" or "Hoo-oo" proceeding thence, but only angry hisses or lovelorn screeches.

BIRD MIGRATION RESUMED.

October 23.—Only on one day between the 12th and the 22nd of October was it possible for migrant winter birds to come to us. This was the 18th, when the wind turned from west to east, and enabled the first fieldfares to reach the east coast. With them came numbers more of hoodie crows, rooks, and jackdaws, as well as some snipe, and a few belated house-martins bound for the far South. Many other birds came, too, of course; but some only added numbers to the flocks which had arrived earlier, with the golden plover, bramblings, siskins, and redwings, while others, like the ring ouzels, were so few and so rarely seen, or else, like the woodcock and the shorteared owl, so solitary and secretive, that, unless one chanced to see them actually arrive upon the coast, it was not possible to say with certainty that they came on any particular day, or merely chanced to be seen then for the first time.

THE FIELDFARE'S ARRIVAL.

In the case of a bird like the fieldfare, however, there is no mistaking the date of his arrival; for he always comes and remains in flocks, and his alarm cry of "chak-chak" notifies every passer-by of his presence in the fields. Comparatively few fieldfares, however, managed to get over on the 18th, and it was not until the 22nd that the wind veered sufficiently to the north again to allow the tide of winter migration to resume its course. The promptitude with which birds avail themselves of a favourable wind

might seem at first sight to support the old idea that they were guided on migration by some mysterious "sense of direction," or were led by experienced birds which "knew the way." These theories are destroyed, however, by the facts that young birds often migrate in advance of their elders, and that both young and old travel far out of their ordinary course when the wind blows excessively from east or west.

THE ORIGIN OF MIGRATION.

Originally, no doubt, the birds migrated for shorter distances, and only upon compulsion, remaining near their breeding-haunts until actual want of food compelled them to fly to save their lives. This necessity would ordinarily arise when bitter winds from north or east drove away all insect life, covered the ground with snow, or locked it up with frost. Flying before such a wind, the birds would travel to the south and west, soon reaching warmer districts, where they could halt, at any rate, till the cold wind came again and drove them on. In the spring the warm south wind—a scorching hot wind it is where the swallows spend their winter—would fill the birds' minds with desire to return to their pleasant summer homes; and, flying with it, they could not help travelling in the right direction. Of course, if the northern hemisphere was an unbroken expanse of land, the birds might be carried far to east or west of their destinations, and only by the merest chance—when the winds of spring happened exactly to reverse the course of those of autumn—would any

birds be brought within range of the remembered landmarks of home. But the natural reluctance of the birds to cross the sea causes them to stick to the coast-lines so long as they can without flying actually against the wind, while the configuration of the land makes them concentrate at projecting headlands, and cross thence to the nearest island or headland of the opposite coast, viewing it at an immense distance from a great height.

THE ORDER OF TRAVEL.

Thus the birds seem to follow recognized routes between their summer homes and their winter quarters, although they are simply wandering off when a cold wind blows in autumn or a warm one in spring. In stereotyping this instinct in the birds' minds, Nature has, of course, improved it by small degrees. Of those birds which originally flew with the cold wind only when actual hunger compelled, many must have died by the way; and those which started first had the best chance of survival. Thus, it is not necessary now to suppose that birds wait until the last minute of safety before leaving their homes. On the contrary, they have acquired the habit of escaping almost at the first suggestion of coming winter in the air, the young birds of the year going off in many cases before their parents have finished rearing their later broods. The old cuckoos, on the other hand, having no nursery duties to detain them, make their own escape before their young are strong enough to migrate.

WIND-BORNE FOREIGNERS.

Thus we see that all kinds of birds which migrate over sea have an inherited knowledge of the kind of wind which has always driven their ancestors, for unnumbered ages, from their northern homes, and are ready to take advantage of the first favourable day for travel. When, if only for a single day, at the right season of the year, the wind sets in the right quarter, one can say with confidence, "This wind will bring the fieldfares" (the earlier redwings having previously arrived). Then we walk into the fields, and lo! "Chak-chak" cry the newly arrived fieldfares in chorus, as they drift away from our presence out of the berried trees. Similarly, when, a little earlier, the cold wind blew persistently from the north-east and east, we could anticipate that unusual visitors from the north-east would be carried to our east coast; and, sure enough, there came the ring-ouzels, as well as the unusual flights of bramblings, siskins, and other birds—including at least one kind which is so extremely rare as a "British" bird that, if I had not journeyed daily, sometimes twice or thrice a day, for a fortnight, to watch the flock of eighteen little buntings, I should be reluctant to state their presence as a fact.

A DELUGE OF ROOKS.

October 30.—"Crow" migrants came to North Norfolk in enormous numbers in the last week of October. For several days without cessation flocks of rooks and jackdaws drifted across the sky, following

the coast-line westwards ; and if a similar invasion of rooks prevailed all down the east coast, England had a prospect of seeing rather too much of the "farmer's friend." The incoming stream of skylarks, on the other hand, dwindled during the greater part of the week, and flocks of peewits became comparatively few. Some woodcocks arrived, less exhausted with their flight than is sometimes the case, when men take them with their hands from the furze bushes along the coast ; and on the whole the shore gunners, who lie in wait to welcome our winter visitors with shot-guns, were rather disappointed with the small proportion of birds worth powder and shot to the vast hosts of rooks and jackdaws.

MIGRANTS FROM THE NORTH.

This disproportion and the direction of the prevailing winds suggest that the birds which had been arriving this week were not foreigners, but the surplus feathered population of North Britain drifting southwards for the winter. If the German Ocean has been swept by the same shifting west winds that we have had, it stands to reason that birds could not come to Norfolk from Norway ; but, on the other hand, the west winds would naturally have driven British birds, travelling from north to south, to the east coast, where, after crossing the mouth of the Wash, they would appear upon the coast-line of Norfolk in unusual myriads. If this is the explanation, as seems probable, of the phenomena of migration during the last week of October, then what looked like a threatened plague of rooks for the coming winter

might have been only a congestion of the rook traffic, which ordinarily takes place in autumn across the breadth of the country, towards the east coast.

MIXED CROWS.

When the wind changes to the east, hooded crows at once become more conspicuous than rooks and jackdaws in the flocks of migrant crow birds, showing that the stream of bird life is flowing again across the German Ocean; and many of the all-black companions of these black-and-grey crows are carrion crows, although generally supposed to be rooks. In the south of England hooded crows appear as sociable migrants, whereas carrion crows are generally known as solitary pairs, remaining year after year in the vicinity of their nesting-sites. But the habits of the birds are really identical, the fact that a single pair of carrion crows will occupy the same place for years showing that they drive off their young every year, and these go to form similar companies to those of the hooded crows, only, unlike these, they are almost indistinguishable from the young rooks of the year. Thus the fact that a large migration of carrion crows reaches our east coast every year is generally overlooked, while no one can help noticing the arrival of the hooded crows.

NOVEMBER.

MUCH FEATHER, LITTLE BIRD.

November 6.—Very few short-eared owls seemed to have reached our east coast by November, perhaps because they are least of all birds fitted to make headway against an adverse wind. Whenever you take an owl in your hand you are astonished afresh at the little quantity of owl that goes to such an amount of feathers, because the size of the bird's head, especially its eyes, and its powerful feet, keep up the deception of its ample pinions and fluffy plumage; but grasp an owl firmly in your hand, and you will find that its small kernel of body inside the husk of downy feathers seems scarcely so large as the rat that you may have seen him swallow head first—although it is true that the rat's tail had to remain hanging out of his mouth until he had digested the head and made room for the final gulp. It is this deceptive featheriness of owls which gives them their amazingly buoyant flight—with two whiffs of its wide white wings the barn-owl sails at speed over a whole range of farm-buildings—but at the same time prevents them from beating against a contrary wind. The solid, strong-flying birds, which have crossed the German Ocean with an east wind and

have sighted England, even fifty miles of adverse weather off our east coast would present no serious obstacle; but to an owl it might make all the difference of landing at last in Holland instead of Norfolk.

THE STRANGER IN THE SHRUBBERY.

Though short-eared owls seemed to be scarce as yet, barn-owls and brown owls had driven their offspring of the year far and wide, and many have been our opportunities of discovering these outcast owls by day in unexpected places. A garden shrubbery, however shady and mouse-ridden, is one of the worst places for a young owl to try to occupy. Soon or late some prying sparrow surely finds him out, and straightway raises a jarring protest against the weird presence in the darkness of the evergreens. All the other sparrows join in with a "damnable iteration" which at last commands your attention. In the next bush, too, a robin sits "chittering" by fits and starts, while a blackbird in the darkness below keeps up a running alarum of "Chink-chink-chink." Then some lively chaffinches come bustling up with crests on end to see what the fuss is about, and at once their brisk monosyllabic "Twink, twink," dominates the din and gives it point to penetrate the least observant ear. Seldom can the owl remain after the chaffinches have discovered him; for, fluttering in the air like white-splashed butterflies immediately over the very branch on which he sits, they advertise his exact locality, and it is usually not long before the branches are parted and an inquisitive

human face peeps in. The owl might have stood the uproar of the birds indefinitely, but your face is another matter. It is no use trying to look sympathetic and retiring discreetly. The owl perhaps regards you as a bigger owl than himself, judging by your face, and with one whiff of his wings he is off, with the whole mob of small birds after him, except the robin, who gets up on a conspicuous branch and sings a song of victory.

DRIVING OFF THE YOUNG.

The habit of the brown owl, and of many other birds, to drive away their young just when the hard time of winter is coming, was a puzzle to the earlier naturalists. Yet its meaning is very simple. Birds which live all the year round upon a limited area cannot afford to have a whole tribe of descendants settled upon the same spot, else in winter they would all starve. So they drive off their young in autumn, when there is yet time for these to migrate to other lands, if need be, or at any rate to find unoccupied room for themselves elsewhere. Migratory birds, on the other hand, permit their young to accompany them in search of the plenty which awaits them all in the distant South; and they only exhibit animosity against their children in the following spring, if their breeding-haunts are such as might be depleted of food by too many families in one place. Thus, although sea birds, which have the inexhaustible sea for feeding-ground, seem tolerant of any amount of overcrowding, birds which breed and feed on inland waters of limited size, such as moorhens and mallards,

will not permit their children to nest close by the place where they were born, because the food supply would soon be exhausted if the number of broods raised upon one piece of water were not strictly limited.

A VENTRILOQUIAL BIRD.

Another British owl, the long-eared owl, is much commoner than most people think; for there is probably no dark pine wood in the country where it does not live. It is a very silent and secretive bird, however, so there is some excuse for the general belief in its rarity, and for the apparent ignorance of the naturalists who write books as to its voice. This is curiously ventriloquial. If you chance to be in a pine wood after dusk you may hear the mysterious note, "Hook, hook," coming apparently from a distance, like the baying of a dog two fields ahead of you; and then, when you have only passed to the other side of the next tree, you may hear it apparently two fields behind you. And all the while the owl is in the tree almost above your head, sitting close to the trunk among the topmost branches, and staring down at you with the bright yellow eyes and pricked-up ear tufts that make him look so strangely like a feathered cat.

SUMMER LINGERS.

November 13.—When the roses of June and the dahlias of September are still in full bloom, with the chrysanthemums of late autumn, one need not remark

that summer's menace of an early and severe winter has not approached fulfilment yet. But it is early to boast of good luck. A change of wind may at any moment cover the country-side with frost, and our friends with overcoats and mittens. Meanwhile, belated summer birds have here and there been keeping company with the lingering summer flowers. Sand-martins, the smallest of the swallow tribes, have been seen well into November hawking for flies as actively as in June. Although, presumably, the weakest of the swallows, the sand-martin makes these belated appearances so often in mild autumns that Gilbert White strongly inclined to the belief that it laid itself away for the winter in holes and crevices of the cliffs and banks, where it was seen hawking to and fro, to and fro, through all the short hours of early November sunshine; but no exploring of rock-crevice, or digging of sandbank in the winter ever brought a single dormant sand-martin to light.

THE WORK OF THE WINDS.

The fact, of course, is that warm south-west winds stop the southerly migration of birds as surely as the north wind compels it; and it is less correct to quote the lingering presence of summer birds as evidence of the "abnormal mildness of the season" than to regard both the mildness of the season and the presence of the birds as effects of the same cause, the prevalence of southerly winds. For the summer birds have no other guide in their autumn migration than those winds whose chill breath tells of waning insect life. Then they fly; and the winds which

warned them carry them far. When the winds drop, and soft airs from the south intervene, the birds have neither incentive nor guide for their journey; so they remain contentedly where they happen to have arrived, making the most they can of the shortening hours of daylight, and seeking the warmest shelters for the long night's rest.

STRANGERS, NOT RESIDENTS.

But these lingering guests are not the same swallow birds which haunted the same spots in June. These went far away with the cold north-easterly winds that brought redwings and fieldfares, hooded crows and bramblings, with hosts of rooks, jackdaws, skylarks, chaffinches, missel-thrushes, and gold crests, as well as woodcock and snipe, robins and hedge-sparrows, etc., to spend the winter in England. With them came belated foreign sand-martins, which, finding southerly winds and summery conditions prevailing in England, have halted for the time. In the case of late house-martins it is easy to see that they are strangers to the place, and not our own resident birds, because on first arrival they evidently do not know which of the nests have been appropriated by house-sparrows, and great disturbance ensues from their persistence in trying to enter these. When, too, they go up to nests which our own martins built, with cunning little slits for doors close to the roof, so that sparrows could not enter, the strangers have obvious difficulty in finding their way in.

THE "CHIMNEY" SWALLOW.

So, too, the latest of the real swallows often betray their distant origin by their endeavours to find lodgings inside our straight brick chimneys. Even in England, in days not very long ago, the swallow was the "chimney swallow," and the "swallow's nest in the chimney" was as familiar a household commonplace as the "sparrow's nest in the water-pipe" to-day. But our modern chimney does not suit the swallow, though many of our latest swallows every year show that they are accustomed to look upon chimneys as their proper homes, by trying to get into them, having, no doubt, been reared in chimneys far away.

THE ATTRACTION OF THE DOG.

Our winter visitors sometimes seem to exhibit their foreign manners in other ways. On arrival, for instance, many skylarks seem not to know the difference between the kestrel and other hawks, suggesting that they have been reared in regions beyond the mouse-hunting kestrel's range. They are unacquainted with our dogs, too, and will sometimes accompany a harmless terrier in an excited, chattering flock all the way across a field, hovering close above him. It is this unusual interest which a small dog arouses in the minds of foreign birds, who have never seen such an animal, that men who shoot and trap fighting water-fowl utilize, when they send out a trained dog to gambol in view of the birds and tempt them within range of gun or net. So in

autumn a pair of foreign stonechats—for, though these birds are to be seen in England all the year round, they are migrants—will accompany a dog from bush to bush down the whole length of a hedge, keeping as close to him as possible, and often fluttering within a foot or two of his back. Though this inquisitiveness of birds often looks silly, and is sometimes used by man to their destruction, it is the characteristic of the cleverest of wild creatures and the quality to which man himself owes his reasoning powers.

THE CHANGE OF THE WIND.

November 20.—Last week it was “lingering summer,” with roses in full bloom by the side of dahlias and chrysanthemums in mid-November; but, three days later, the wind changed to the east, and straightway the dahlias were blackened and cut down by frost, while the roses and chrysanthemums in exposed places were caught too, and overcoats came out next morning like mushrooms after a moist September night. Still, no subsequent severity of the weather could take away all that we had gained by St. Martin’s summer. In ripened wood the fruit trees already bore promise of a splendid crop next year; and the country in general had seldom been in better trim for a good, wholesome winter sleep. Much plant and animal life had, of course, been caught napping—or, rather, had been caught awake when it ought to have been napping. On the very day before the wind changed and brought the frost, day-flying moths were darting over the belated flowers; and when next day

the blue ageratum which had tempted the Silver-Y moth with its honey, was brown and shrivelled, one could not help wondering whether the moth had had the good luck overnight to get into a hole where winter's ice-breath would not reach him. Where, too, were the great striped bumble-bees that went droning along the sunny hedges, crusted with glittering blackberries, only the day before? Where were the bluebottles that had been sunning themselves by scores on the warm tree-trunks?

THE LAST SWALLOWS.

Nay, where were the last of our swallows? These had been seen so lately as November 10 hawking briskly for flies in the south-west, while even on the bleak east coast—though it was very far from “bleak” then—the sand-martin had lingered until the 7th. Fortunately, one need seldom despair of the swallows' fate in autumn. In spring, when they come to us before that fickle season has abandoned its wintry caprices; we often see them suffer, and find them starved by dozens; but in autumn they have no home-sickness to tempt them further north than weather-wisdom would advise. What we call “our” latest swallows are probably not ours at all, but loitering travellers from the far north, stranded in England by the failing wind that brought them from oversea. They only needed the cold wind to continue their journey by; and even if they have no premonitory sense of coming change, they must ordinarily discover the cold wind before we do. Thus on the 15th, though the warm south wind was still blowing upon

us groundlings, you could see the higher clouds travelling from the east ; and any bird that flew aloft would have felt its chill, and, taking the hint to fly if necessary, would very soon—with the speed of its flight added to that of the wind—have reached a region beyond the range of immediate cold.

BIRDS AND COLD.

Yet it is not, of course, the cold that the swallows fear, nor, indeed, can we say that their migration is prompted by fear in any shape. The cold which comes with a wind from north and east in autumn sweeps all insect life from the air ; and from the first swallows that saved their lives by flying far for food with the cold wind till they came to warmer regions where it had spent its force, succeeding generations have inherited a fixed life-saving instinct to fly with the cold wind as soon as possible after their last broods are on the wing. As for actual cold, birds seem to feel it very little. Look at the swarms of foreign starlings which come to us quite early in autumn. It was certainly no dislike of cold which drove them hither ; because in mid-winter, when you shiver through warm gloves and overcoat, you may see them gathering joyfully to bathe in the freezing mixture at a pond's edge where the cart-horses have smashed the three-inch ice.

THE MIRACLE OF LIFE.

Indeed, indifference to extremes of heat and cold is one of the strange characteristics of small life. In India, when the crows, with beaks wide agape, seek

shelter from the midday sun, when the leather-hided buffaloes bury themselves to the tips of their upturned noses in water, and when no large living thing dares to remain exposed to the blistering sun, that would frizzle up a beef-steak in an hour, still you may see tiny little blue butterflies sitting on the scorched stalks of grass, and fluttering now and then along the baking ground, as if the warmth were pleasant. So in winter in England, when the ground is frozen hard and whitened with powdery snow, you may, if a gleam of faint sunlight lasts for a bare half-hour, see a host of filmy gnats gaily dancing in the leeward shelter of a furze bush. They are so flimsy that you can blow the whole crowd aside with one strong breath; and if one of them chances to be carried against a twig, the trivial collision knocks it all out of shape. But presently it straightens its spectral body, disentangles its cobwebby legs, smoothes its crumpled wings, and is off again to rejoin the gay dance in the air. What is the mysterious speck of life which keeps the gnat lithe and active, while our water-pipes burst with frost? What is it that prevents the infinitesimal drop of moisture in a small butterfly from drying up in midday Indian heat?

THE BEGINNING OF THE YEAR.

November 27.—When does the year of nature begin? Spring, of course, is the conventional beginning of the year, and winter its end; but one is often tempted to regard November as the first month of the natural year. With the fall of the leaf all trees turn by common consent to the work of the coming

year ; and although there may be little to show for it at first, they continue to work indoors whenever the weather permits throughout the winter. This, therefore, is not the end of the year to them, but its beginning. A potato, hidden away in a dark cellar where the temperature scarcely changes, sprouts at the same time as its fellows who have been taken out and planted where the warmth of spring sunlight can reach them ; and it does this because it has been working, like them, during the winter, and, when the proper chemical changes have taken place in its substance, it pushes out shoots as they do. For want of light and warmth the shoots may remain thin and white, while the plants outside bear a luxuriant green haulm ; but during the winter it had worked as hard as they did for the coming summer. The potato in autumn, as a separate living entity apart from the dead plant which bore it and its brothers, is proof that the new year really begins with the fall of the leaf. In November, too, you will find that the ground is covered with little seedlings, all trying to steal a march upon each other, before frost and snow compel a rest ; and certainly so far as these seedlings, the earliest of next summer's plants, are concerned, winter is not the "end" of their year.

THE BIRDS' NEW YEAR.

With the birds, too, convention fixes the beginning of their year in the middle of February, when they are supposed to recognize St. Valentine's influence by pairing and setting up housekeeping without delay ; but if we could ask their opinion, a twittering majority

would certainly declare that their year of life begins in the autumn. It is then that most of them get their new clothes, and that the birds of the year start life on their own account away from their parents. And their parents, we may imagine, feel that the year's work is ended when they have seen the last of their lazy, lingering youngsters off the premises. Not all birds drive away their young; nor are the young of all so precocious as to begin love-making in autumn; but birds which pair for life often seem to choose their mates as soon as possible after they have assumed full plumage, and that important crisis occurs in the first autumn of most birds' lives.

THE COURTING YELLOWHAMMER.

It is in autumn, for instance, that yellowhammers fight so much; and if you watch their fights you will see that they always take place between two males for the possession of a female; and between the rounds the temporary victor makes a beauty display for her admiration. A very proud person he looks, too, with brilliant yellow front set off by his richly black-streaked mantle, and contrasting with the bright chestnut above his tail, which also displays to great advantage the white of its outer feathers. From the human point of view, which is over five feet from the ground, the courting yellowhammer may look rather ridiculously like a yellow frog as he hops around, but to the wooed one, who sees him on her own level, he presents, no doubt, a splendid and imposing aspect. And that he is courting there is no doubt, though this would not be the case in autumn if the approaching

winter ended the year of life. The courtship of autumn will not reach its legitimate end until the last batch of next summer's curiously scribbled eggs have given place to black-streaked brown youngsters with a tinge of chestnut, very like their mother, and these have flown in turn. When times are hard in winter, the yellowhammers gather with sparrows and finches to find food where they can, but a very little winter sunlight will suffice to set them fighting again; and early in February you may listen for the simple trill with a catch at the end which tells all whom it may concern that a yellowhammer proposes to set up housekeeping at an early date close to that spot, and if any other yellowhammer has any objections to make will he kindly step forward? This is the literal interpretation of the song of most birds; but the life of the year does not necessarily commence in spring merely because most birds then begin to sing.

THE "HIBERNATING" SWALLOW.

Perhaps the swallows which return to their homes in spring might be supposed to begin their year then; but they put on their new clothes in the winter, which they cannot therefore regard as part of the "old" year. And this winter-moult of the swallows, by the way, disposes of the lingering belief of many that they hide in holes and crevices, and spend the cold season in a torpid state. Many such occurrences have been recorded, of cuckoos as well as swallows, by apparently trustworthy witnesses; but the unfortunate thing is that men of science never witness them, nor are proper measures taken at the time to

place the matter beyond doubt. So the hibernating swallow or cuckoo must still take its place with the viper that swallows its young and the hybrid "cat-rabbit"—both creatures which have been ramping at large in the Press lately—as well as our old friends the sea-serpent and the toad buried in solid rock, among the things which science regards as "not proven." If the mere verbal testimony of credible persons could establish a scientific fact, we should have to believe that, at the approach of winter, swallows "conglobulate" and fall in a lump together to the bottom of a pond, where they spend the winter, according to Dr. Johnson, in sleep. Plenty of credible witnesses saw that happen in Dr. Johnson's time.

DECEMBER.

FLOWERS OUT OF DATE.

December 4.—It is not every year that you can go out and gather a bunch of wild flowers on the first of December. Nor, perhaps, is it worth while to do so even when you can. The lingering poppy, which still makes a bright spot of colour here and there in the weed-margin of a late stubble, is a poor thing when you take it in your hand. It has not had the heart to smooth out its wrinkled petals properly, and it is always borne, as a sort of stumpy afterthought, on a weak side-shoot from some old flowering stem that lost its seeding capsules long ago. All of the other August flowers that have lingered into December—scabious, ragwort, toadflax, yarrow, campion, and so on—seem equally paltry when you gather them; for very different chords of sentiment are struck by the last flower of autumn and the first bloom of spring. The early primrose or violet is the virgin promise of the coming beauty of the ripe year; the other suggests as hollow a pretence as the fixed blush on cheeks that are old enough to know better. The December poppy attracts no insects and sets no seed. If the sheep do not tread it into the mud, the frost will cut it down.

THE WINTER MOTH'S HOLIDAY.

But the mild November weather which made December poppies possible is so much to the good, so far as wild nature is concerned. When, next autumn, we shall be complaining of the number of barren shoots upon our fruit trees, it may be because the Winter moth has had a high old time in the orchard during last month's mild nights. For the male Winter moth is a flimsy-winged, brown creature, which perishes miserably by thousands when winter storms prevail, drowning him in the ditches, or flinging him, dragged past recovery, among the drenched tangles of a rain-swept hedge. If, on the other hand, it freezes hard, the female Winter moth, a little spidery atom, with no wings to speak of, does not venture forth. So the best part of this insect's hopes of progeny are often wrecked between the Scylla and Charybdis of winter's vagaries. Not that we need complain. Every egg which the Winter moth lays in our orchards may mean one cluster of fruit-blossom the less in spring.

WEATHER, BIRDS, AND WEEDS.

The birds fare well, too, in the mild November, with scarcely a day when gulls and plovers, rooks, jackdaws, and starlings might not forage afield with certainty of finding abundant food in the soft earth, of earthworm and wire-worm, chafer-grub and "leather jacket," the pestilent offspring of the daddy-long-legs. So here we see how a mild November may have exactly the opposite effect upon the farmer's fortunes

in orchard and ploughland or pasture. In one the myriad moths may wreck the stillborn promise of the apple crop; in the others the rooks and their allies may be clearing the land of its worst pests. We often laugh at the farmer because he always finds something to grumble about. When his crops are growing so fast that you can almost see the green blades lengthening, he will say that it is "wonderful weather for weeds." Yet, if you watch the small life of the fields, you will see that the good and the evil are so inextricably mingled, that if we could appoint a committee of farmers to arrange our weather they would be ruining each other half the time.

THE FARMER AND HIS "FRIEND."

Take the rooks, for instance. It may be a fine thing now to see the stubbles or the pastures black with them, and to hear the roar of their clamour, like the sea on a shingly coast, as they assemble by tens of thousands from the clustering farms to roost in the timber of some ancient park. But when the frost binds the earth, and even the rooks' hard bill cannot pierce the iron furrows, what will those tens of thousands do? The rook is a wise bird, and seldom starves. Among other accomplishments, he has learned the trick of catching hold of the end of a straw in a corn-stack, and dangling at the end of it with flapping wings till he pulls it out, with an ear of corn at the end. It does not need tens of thousands of rooks exhibiting this accomplishment daily through a week of frost to make a respectably sized hole in all the stacks of all the farms which they

have lately been clearing of worms. This is one of the reasons why the farmer raises one eyebrow when you talk to him of his "friends" the rooks. During a hard winter he likes to see some of his friends on the top of his corn-stacks—dead, and tied to sticks as a warning to the others.

GOOD-NIGHT CLAMOUR.

Why do the rooks make such a noise when they are retiring to rest? Why do the starlings assemble to sing a good-night chorus together? Why does the blackbird so often keep up an incessant "chink-chink-chink" when he has retired to the shelter of a hedge for the night? Why does the pheasant make such a clatter whenever he flies to or from his roosting-tree? The same answer does not, probably, fit all these questions; but we may be sure that none of these birds would be noisy when they are going to bed if they did not gain something by it. The old adage that, if speech is silver, silence is gold, has no application to them, otherwise those of their kinds which kept the gold of silence would have made most profit in the struggle for existence, and have set the fashion for succeeding generations up to date. So far as the rooks are concerned, it is evident that they run no risk by making a noise. They roost on high tree-tops, well beyond the reach of enemies at night. So they lose nothing by making a noise. But what do they gain? Possibly their uproar is similar in motive to the clamour of a flock of sheep and lambs. In the great multitude of rooks every member has his mate—in earlier autumn you hear their queer gurgling

love-songs—or at least his brothers and sisters and parents. They have no means of sorting themselves out except by shouting; and when a few thousand birds are all shouting out each other's names at once there is bound to be some noise.

BIRDS AND WEATHER.

December 11.—By sudden frosts and storms many time-honoured traditions, which draw weather forecasts from wild life, have been justified. When rare seagulls are shot in our harbours and stormy petrels are driven ashore, when common gulls appear in the fields far inland, and companies of geese, with multitudes of lesser wildfowl, visit unaccustomed rivers, then the oldest inhabitant of every village will tell you to expect hard weather; and so it has been. The same winds that brought business to the bird-stuffers on our south-west coasts scattered wreckage on the shore; and a few days later the east-coast farmer takes down his gun for a try after the wild geese with a better conscience because frost holds the ground and the plough stands idle.

WINTER AUGURIES.

The movements of birds are often used for weather prophecies on a larger scale. Thus, because many more pink-footed geese than usual appeared in October, 1902, on the north coast of Norfolk, the local augurs predicted a winter of Arctic severity; and they saw confirmation of the forecast in the

vast numbers of migrants—especially redwings and fieldfares — which streamed into England from Scandinavia with the east winds of the latter part of October. But such prophecies are necessarily unreliable, because an unusual influx of foreign migrants may be due to different causes. It may merely mean that the birds have enjoyed a favourable season for breeding in their northern homes, and have multiplied inordinately. On the other hand, it may have indeed been severe and bitter weather which drove a larger number of birds than usual to the south and west, but the cold winds may have died away before they reached these islands, which are ordinarily dominated by the genial influences of the warm Atlantic. Or, again, the extraordinary influx of redwings, fieldfares, and other common travellers may have been caused by the fact that the wind blew directly from the east at the time of their migration—as, in fact, it did—and thus brought to England hundreds of thousands of birds which would otherwise, with a north wind, have reached the mainland of Europe. It is, therefore, of little use to attempt to forecast the character of a whole season from the arrivals of winter birds, although these undoubtedly inform us of the direction of the wind which brought them ; and since a wind from north or east in winter infallibly brings cold weather, it is safe, nine times out of ten, to predict at least a short spell of hard weather when migrants are flocking in to our north and east coasts.

JACKDAWS AND ROOKS.

One could not help wondering, in October and early November, where all the rooks and jackdaws, which passed in an endless procession westwards from the east coast so long as daylight lasted day after day, would find a home for the winter; and in all the south-eastern counties, at any rate, farmers now agree that they have no recollection of so many of these birds upon the land in any previous winter. The plurality of jackdaws was especially noticed; because, although much smaller than the rooks, they dominate the mixed gatherings with their incessant clamour.

THE MULTIPLYING MISSEL-THRUSH.

Blackbirds and missel-thrushes seemed almost as inordinately numerous as rooks and jackdaws in the winter. Indeed, there is some reason to think that—like the hawfinch, the house-sparrow, the starling, and, it is to be hoped, the goldfinch—the missel-thrush is becoming more common in England from year to year. The increase may, of course, be merely the temporary result of a succession of favourable breeding seasons and mild winters, but it is more probably due to the extension of game preserving. The missel-thrush differs from the song-thrush in its bold and open flight, and so falls much more frequently a victim to the passing hawk. Also it builds a conspicuous nest in leafless trees in early spring, and so is more often than any other bird robbed of its eggs by crows, magpies, and jays. But hawks,

crows, magpies, and jays practically cease to exist wherever game is strictly preserved, because the keepers shoot and trap them without mercy. Thus the missel-thrush, who is a valiant, strong, and selfish bird, finds himself freed from the severest checks upon his multiplication, and thrives—to some extent, it is to be feared, at the expense of his weaker, silver-tongued cousin, the song-thrush.

EBB AND FLOW OF BIRD LIFE.

One cannot, however, gauge the numbers of the missel-thrushes that will nest with us next spring from their abundance in our garden in winter, because most of these “churr”-ing tyrants of our yew trees and holly bushes are foreigners. Large numbers certainly come over to our shores in autumn; and, since we must believe that the migration of birds is the result of an ancestral instinct, we have no reason to suppose that it affects foreign members of a species only. In other words, if some missel-thrushes are prompted to fly with the cold wind in autumn, we must presume that all feel the same impulse, and that our own family gatherings of missel-thrushes, which are so common in the fields at the end of summer, find their way to more genial regions, their places being taken by immigrants from north and east. Then, when soft warm winds blow in earliest spring, our own missel-thrushes return, and the foreigners retire. Though as yet the actual facts of bird migration are little understood, this alternate ebb and flow of bird life between winter and summer seems the simplest and most reasonable solution of the problem.

LIFE AND DESOLATION.

December 18.—A solitary large bird always seems to add to the desolate aspect of a wintry scene. The shrug-shouldered heron, standing knee-deep and all alone in a wide mere fringed with dead, rustling rushes; a raven perched aloft on the lichened crags that dominate a silent valley; a single black-backed gull sitting by the edge of a winding dyke that loses itself in the dead level of salt-marshes stretching from horizon to horizon—each of these lonely landscapes seems to need that touch of motionless life to emphasize its utter emptiness and vastness. Nor do you realize the size and silence of a large tree-bordered lake until its crystal surface is cracked by the wake of some distant water bird. It is not so much that this speck of a bird gives you a point to measure the distance by, as that its utter loneliness in the waste deepens your impression of vastness and solitude. But of all symbols of desolation in a landscape, perhaps a hawk, seated alone on a lonely, leafless tree overlooking a waste of stubble, as the short winter day closes, is as saddening as any.

THE HAWK'S LONELINESS.

There is always pathos in the loneliness of a tyrant. From dawn to dusk the hawk knows no moments of peace. Every other bird may pass unnoticed where he chooses, and consort with whom he will; but each wing-beat of the hawk spreads panic before him, and he is followed by the vociferation of hate behind. Wherever he alights is a

wilderness, void of life, though a minute earlier it may have been thronged with busy, twittering flocks. Wherever he passes the horizon is ringed with feathered fugitives; but it is a horizon which widens from him wherever he turns his course. Now and then, rising suddenly above a favouring belt of trees, he may see scattering wild life almost beneath him, and, shooting earthwards like a thunderbolt towards some vainly fleeing wretch, he may wet his hooked bill with warm blood; but those moments of pursuit and feeding are short, and for all the rest of the day one cannot help thinking—from the human point of view—that the hawk's lonely life in winter, shunned and hated by all, must be desolate and wretched.

A HUNTER'S LIFE.

Evidently, however, the hawk does not regard himself from the human point of view; for there is no reason why he should not have a companion if he chose, instead of spending the first winter of his life in solitude, like a wandering spirit of evil. His parents, though they seldom co-operated in hunting, and as a rule pursued different kinds of quarry—the female sparrow-hawk, indeed, is commonly called the "pigeon-hawk," because her larger size enables her to fly at stronger prey—yet they were generally within hail of each other, so to speak, and returned to the same home at night. So the young hawk, when his father drove him at last from home, had had no example of loneliness in life before his eyes; yet it is the instinct of his race—at any rate in youth—to wander separate and solitary all the winter, seldom

halting in one place for many days, and roosting at nightfall apparently wherever the day's chase had ended. Thus the whole country is traversed by these highwaymen of the air, until, as spring approaches, the residue which have escaped the gamekeepers' guns have found their way to safe woods in good hunting country, where they discover mates and settle down in life.

FOR THE GOOD OF THE SPECIES.

In this dispersal of the young birds of the year to seek their own fortunes during winter we see the wise working of evolution, which prevents the overcrowding of any species in a few breeding-sites, and ensures that all suitable localities shall be occupied; and no operation of nature is more curious than the sudden change which takes place, for the good of the race, in the minds of parent birds towards their children when it is time for the latter to depart. In the morning you may see a parent robin feeding young ones, whom before nightfall he will be chasing viciously off the premises; and whenever you see birds wandering alone in winter you may be sure that they have, in the first instance, been driven out by their parents, and that they belong to kinds which would soon overcrowd a given locality if allowed to remain and multiply there. Woodpeckers and shrikes are cases in point; for these birds, like hawks, require a space to themselves for hunting-ground.

FAMILY LINNETS AND DOMESTIC STARLINGS.

Linnetts, on the other hand, may be taken as the opposite type—of birds which never need to separate, because where they nest there is always room for all, and where they feed, upon the seeds of field weeds, there is food for all. So the linnets remain in family parties or communal gatherings all the year round, rarely quarrelling among themselves, and seeming to take pleasure in singing in concert, whereas with most birds song means defiance. Midway between the linnet and the hawk in this matter comes the starling, who is obliged to drive his young away, because the recesses in which he nests would soon become overcrowded, although the young birds are under no necessity, in consequence, to wander alone, like the hawks. One hawk, searching for dinner, scares a whole country-side; but where one starling finds a wire-worm in a field, a thousand starlings may find one a-piece at the same time, and when they have exhausted one field they can easily find another. So the young starlings spend the winter in large flocks, migrating if necessary to richer lands, while their parents stay at home, and their fathers sing every morning and evening in front of their ancestral roof-trees, when the weather is fine, to announce the fact that they and no one else are legitimate owners of those particular premises.

SPRING IN WINTER.

December 25.—In every winter there comes a day when you feel that Nature has turned her face towards spring. It is not often that this happens

before Christmas, but December 22, 1902, was such a day. In the morning, windows that had been closed overnight were moist on the outside, and when they were thrown open a warm, balmy air came into the rooms. With the air came the persistent voice of the hedge-sparrow in the shrubbery, singing his simple, twisting trill over and over again. Presently he dropped from his singing perch, halfway up a small larch, to the path, where his wife was pattering along with her little ruddy feet, microscopically examining the gravel at every hop. Though there is little enough of personal adornment about a male hedge-sparrow, except a bluish shade of grey on the head, this one exhibited all the conscious pride of the commanding and protecting sex in the way that he took precedence of his wife, and, with wings officiously flicking at every movement, hopped just a foot in front of her down the path. When a hedge-sparrow adopts these manners, it needs no gift of prophecy to foretell that there will be a hedge-sparrow's nest thereabouts later.

THE LEAF-BUDS SWELL.

Of course, it is absurd to think of spring and birds' nests at Christmas.* Months hence we shall be watching spring's false starts in her annual obstacle race. But no depth of snow or thickness of ice hereafter, no bitter winds or blighting fogs will altogether take back the advantage gained in the closing weeks of a mild December. Look at the larch, where the hedge-sparrow was singing. Already its twigs, so

* Yet a thrush was sitting upon eggs early in the following January.

lately veiled in the golden glory of last summer's dying leaves, have taken on the yellowish tinge which properly belongs to February, because they are swelled with rising sap. Each round leaf-bud is twice as large and only half as dark in colour as it was two months ago. Look at the willow, too, and you will note a brighter tinge of colour in its shower of drooping wands. If you could climb to the crest of the hedgerow elm, to see why its outline seems so dense against the sky, you would find every twiglet beaded with the round swollen buds, from which in earliest spring will burst the thousands of green, papery flowers that the elm decorates its old head with every year for the sun and moon to look at, eighty feet above the ground. But you need not crick your neck, staring so high for evidence of Nature's movement. You can see it in the thousand little seedling wild plants that are already jostling by the score for space where there will only be standing-room for one next summer. Snow may bury, and frost may bruise these seedlings, but no return of winter's rage can put them back into their seeds again.

PAIRING BIRDS.

And of birds the hedge-sparrow is not alone in trying to steal a march on winter. The starlings during the mild weather have hardly ceased singing all day long; and though, when you stroll out after breakfast, you scarcely notice the first few notes of a familiar melody which keeps rhythm with the quickened pulse of life, presently you realize that it

is a song-thrush singing, not *sotto voce*, as you may have heard him early in November from the middle of some thicket, but sitting aloft in a bare oak and casting his music on the air with something of the generous confidence of spring. In the sheltered corner of the stubble below, where several coveys of partridges have assembled for their daily dust-bath, there is already hot blood in the challenges which the males are creakily casting at each other; and when the coveys rise, as you appear at the gate, you may notice that in the apparent disorder of their whirring flight, pairs have a tendency to keep together. With the turn of the year, two partridges cease to be a "brace"—though they still hang up as such in poulterers' shops—and become a "pair" for nature's purposes.

PHEASANT AND WREN.

The pheasants, too, that get up with metallic clatter of vibrating quills from the shelter of the corn-stacks where they have been pulling out the straws, go off in manifest couples also; for your pheasant, polygamist as he is in the coverts, usually has to be content with one wife in the fields. And as you stand by the gate two wrens—tiny feathered atoms—come whirring down the other side of the hedge, scarcely a foot from the ground; and one of them suddenly pops up on the top of the gatepost, and there, posing in half a dozen comical, cocktailed attitudes, pours out the jubilant song that seems so strangely strong and loud for so wee a singer. Then he pops down again, as if he had tumbled off the

post, and goes off like a bullet after the other, for she is his wife, and the little ruddy wren feels the urgency of love in warm winter weather just as strongly as the big ruddy pheasant.

THE PLOVER, TOO.

Look at the peewits, too, wheeling by hundreds over plough-land and stubble. They still flock together, and still utter their plaintive winter note, "Pee-ee," as they rise at your approach; but here and there you will see one strong-winged bird whirl, swoop, and ricochet—as it almost seems, from the ground—with the drunken ecstasy of flight that marks the wooing peewit; and as he shoots aloft before another swoop you hear the rollicking "Pee-a-weet, pee-wit" that has been unheard since the spring. No matter what severities the New Year's weather may bring, we have passed the shortest day of winter, and even in December Nature has turned her face towards spring. She may have to mark time for weary weeks or months later; but Nature never goes back.

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